127224

C

Class______ No.______

IN EXCHANGE

4.75

ZUCKER

The Nebraska
State Medical Journal

Volume X
January 1925—December 1925

F. A. LONG, M. D., F. A. C. S.
Editor

R. B. ADAMS, M. D.
Business Manager.

Committee on Journal and Publication
F. A. LONG, M. D., Chairman
W. O. BRIDGES, M. D.
B. F. BAILEY, M. D.
R. B. ADAMS, M. D., Sec. Ex-Officio

THE HUSE PUBLISHING CO., Norfolk, Nebr.

INDEX TO VOLUME X

Acute Appendicitis in Children, A. W. Anderson.. 347
Acute Retrobulbar Optic Neuritis of Paranasal Sinus Origin, W. A. Cassidy.................. 439
Address on Medicine, Lucien Stark.............. 281
Adenoids and the Pharyngeal Bursa: Their Structure and Morphology, H. B Lemere........... 453
Angina Pectoris, W. W. Arrasmith............. 294
Anuria, Complete and Incomplete, W. A. Myers.. 415
Appendico—Biliary Syndrome, The, Max Emmert 370
Artificial Pneumothorax in Medicine, M. C. Howard 302
Athletics and Competitive Athletics Versus Sound Physiological Principles, Inez C. Philbrick... 284
Bacterin Treatment of Pertussis, S. A. Swenson.. 397
Blindness Which Could Have Been Prevented, Jas. M. Patton 426
Blood-Nitrogen Method For the Practitioner, Miles J. Breuer 178
Blood Pressure Changes Accompanying Coronary Occulsion 357
Books Received 112, 364, 451
Caesarian Section with Special Reference to Indications and Contraindications, Earl C. Sage.. 113
Carcinoma of the Vulva, Max Emmert........... 216
Case of Complete Heart Block, Arthur L. Smith.. 481
Case of Fracture of the Pelvis, A. H. Winnett Orr 181
Case of Suppurative Destruction of the Thyroid With Resulting Myxedema, Malcolm B. Wilcox 100
Choice of Operation in Peptic Ulcer, L. D. McGuire 297
Colitis, Adolph Sachs........................... 419
Congenital Hypertrophic Stenosis of the Pylorus, J. A. Henske 353
DEATHS—See Necrology.
Diagnosis and Treatment of Ductless Gland Disorders, Wm. Engelbach.....................409, 459
Dietetic Treatment of Diabetes Mellitus, F. L. Rogers 478
Differential Diagnosis Between Abdominal Cysts—Intraperitoneal and Retro-Peritoneal, John E. Summers 37
Diseases of the Heart: A Clinic, Arthur D. Dunn.. 1

EDITORIALS—
- Actual Dangers of Cultism.................. 404
- A Glimpse of the Life and Work of Louis Pasteur 483
- Allergic and Toxic Properties of Lens Protein 405
- A. M. A. Meeting at Atlantic City, N. J., Section of Diseases of Children............ 275
- Annual Dues 30, 66
- Annual Dues for 1925....................... 273
- Atlantic City Meeting, The.................. 185
- Call For Papers......................30, 66, 104
- Cancer Problem, The......................... 444
- Clinical Congress at Philadelphia, The...... 484
- Clinical Features of Heart Disease.......... 231
- Colloidal Manganese in Psoriasis............ 447
- Congress of Medical Councils in Chicago, March, 1925 229
- Consultant and the General Practitioner, The 402
- Defense Committee, The...................... 318
- Defense Fund and Malpractice Suits, The..... 105
- Defense Fund Needs, The..................... 183
- Delinquent Dues 145
- Doctors' Fee, The 272
- Dr. Inez Philbrick, President Nebraska Association of Medical Women................ 145
- Dr. Irving S. Cutter, Dean.................. 105
- Drift of Doctors in Nebraska, The........... 227
- Dues 104
- Dues for 1926............................... 482
- End of Volume X, The........................ 484
- Etiology, Pathology and Treatment of Cancer of the Cervix 446
- Evaluation of Doctors Relative to Public Health Work 276
- Family Doctor, The 318
- Fractures 320
- Fur Dermatitis 30
- General Practitioner and the Annual Meeting, The 66
- Glimpse of British Medicine................. 358
- Group Practice 359
- Hiring Community Doctor 185
- Honoring the "Old Timers" of the Omaha Profession 447
- In Appreciation 32
- Income Tax Deductions....................... 483
- Increase in Membership Dues, The............ 444
- Interstate Clinic Tour 359
- Inter-State Post Graduate Assembly of America, The 485
- Leadership and "The Ring"................... 104
- Lengthening Human Life 319
- Lincoln, May 12, 13, 14..................... 182
- Loss of Another University Man, The........ 144
- Maud Slye and Her Mice...................... 68
- Medical Education 272
- Medical Library Service for Nebraska Physicians 32
- Missouri Valley Medical Meeting At St. Joseph, The 445
- Nebraska State Medical Association Meetings 184
- Nebraska State Medical Journal—An Appreciation 32
- New President's Greeting, The............... 31
- Nineteen Twenty-five, Lincoln Session....... 226
- Oculists or Optometrists—Which?............. 485
- Office of the Journal and Secretary Moves, The 358
- Pertinent Questions 182
- Question of Ethics, A....................... 109
- Report of the Oto-Larynological Meetings at Atlantic City 274
- Resourcefulness 446
- Rights of the Essayist to Be Heard, The..... 144
- Scientific Medicine or Cultism.............. 105
- Secretaries and Editors Conference in Chicago 30
- Should the Nebraska State Medical Association Engage in Propaganda For the Purpose of Educating the Lay Public?...... 106
- Society Meetings 68
- Solving the Cancer Problem.................. 358
- Some Erroneous Notions 359
- State Bureau of Health Notes, The........... 231
- State or Private Laboratory................. 227
- Survey on Prescription Writing, A........... 402
- Teaching the Public, A Professional Duty.... 318
- Terminal Disinfection and Fumigation........ 402
- Tuberculosis and the Eye.................... 108
- Unwarranted 277
- What of the Stewardship?.................... 482
- What Shall We Do With the Tuberculous?... 144
- What Should Be the Attitude of the Regular School of Medicine Toward the Various Cults in Medicine? 67
- What Suggestions Have You to Improve Educational Methods That May Better Prepare Students for the Practice of Medicine?... 146
- Wilson and Cochran's Fractures and Dislocations 229

Epidemiology of Streptococcus Sore Throat, J. Jay Keegan 200
Etiology and Prevention of Diphtheria, The, John D. Reid 134
Etiology and Prevention of Scarlet Fever, The, John D. Reid 179
Fifty-Seventh Annual Convention of the Nebraska State Medical Association, Lincoln May 12-14, 1925 260
Fractures of the Lower Third of the Leg, J. E. M. Thomson 222
Fundamental Principals of X-Ray Diagnosis in Diseases of the Pleurae and Lungs, Albert F. Tyler 73
Gallbladder Disease, Clayton F. Andrews......... 365
Gastric and Duodenal Ulcer, Symptoms and Treatment, A. C. Stokes........................ 20
Group Practice in the Smaller Communities, D. D. King 220
Head Pains of Local Origin, B. A. Smith.......... 132
Hemophilia—An Interesting Case, A. A. Conrad.. 305
Hemophilia With Report of Two Cases, Michael Wohl 442
How the Mortality May Be Reduced in Operations on the Gallbladder and Gall Ducts, John E. Summers 373
Ileus, V. V. Smrha............................... 88
In Memoriam 271
Keilland Forceps, The, Chas. F. Moon........... 163
Kidney of Pregnancy, The, J. N. Campbell........ 52
Malignant Degeneration of a Parotid Cell Nest in the External Auditory Canal, A. F. Tyler..... 431
Management of Hypertension, George P. Pratt... 440

127224 NOV 6 - 1928

Medical Education and the Family, Palmer Findley 193
Medicine of Yesterday, Jno. B. Potts 237
Medico-Legal Defense Department: The Law 141
Meeting of the Board of Councilors 101
Mercurochrome Therapy—Case Reports, C. A. Roeder; W. H. Judd 41
Minimum Requirements in the Treatment of Infantile Paralysis, H. Winnett Orr 434
Modern Aspects of Nutrition, Victor E. Levine—
  1 Food Deficiencies as Factors in Limiting Growth 91
  2 Food Deficiencies as Factors in Limiting Growth (Cont'd) 122
  3 Faulty Food With Reference to Energy Metabolism 156
  4 Faulty Food With Reference to Derangement in the Process of Metabolism Through Impairment of the Endocrine System 208
  5 Faulty Food and Bodily Strength 248
  6 Food With Reference to the Acid-base Equilibrium 290
  7 Food With Reference to the Acid-base Equilibrium (Cont'd) 336
  8 Food With Reference to the Acid-Base Equilibrium (Cont'd) 379
  9 The Acid-Base Equilibrium With Reference to Pediatrics—Part 1 471
Nebraska State Medical Association Audit 139

NECROLOGY—
  Allen, P. B. 236
  Ballard, Charles F. 408
  Breckenridge, Mary J. 36
  Carson, William T. 152
  Chidester, T. J. 236
  Collins, G. W. 152
  Daniel, Zadok 488
  Dodge, Seth W. 364
  Dodson, Porter F. 488
  Hay, James C. 451
  Koenig, Albert H. 112
  Jester, Charles W. 191
  Mayer, John 236
  Millener, Frederick H. 236
  Miller, W. K. 72
  Murray, Ralph W. 488
  Newcom, Floyd L. 72
  Packard, W. H. 488
  Parchen, Henry W. 408
  Robinson, A. V. 112
  Rumery, Arthur C. 408
  Squires, William H. 324
  Smith, Joseph H. 112
  Speice, William K. 36
  Swanson, Carl L. 36
  Thompson, T. D. 72
  Wilkinson, S. W. 72

Necropsy Report From the University Hospital, Omaha 64
Obstetrical Procedures, J. R. Taylor 130
Ochsner's Non-Operative Treatment of Goiter Again—A Rejoinder by Dr. E. H. Ochsner 138
One Hundred Cases of Cardiac Irregularities Due to Extrasystoles, Arthur L. Smith 78
Oral Focal Infections Related to Systemic and Degenerative Diseases, L. J. Swanbom 203
Other Causes of Glaucoma, D. D. Sanderson 177
Pathological Physiology of the Spleen, Michael G. Wohl 153
Pernicious Anemia, G. I. McCrea 176
Perineal Prostatectomy Under Sacral Anaesthesia, Edwin Davis 8
Physiotherapy in Pulmonary Tuberculosis, Miles J. Breuer 56
Pneumococcus Peritonitis, Frederick G. Kolouch 174
Poliomyelitis From the Standpoint of the Neurologist, Geo. E. Neuhaus 211
President Elect, The 357
Prognosis of Early Syphilis, Otis W. Martin 480
Progress in Obstetrics, W. C. Becker 315
Pyuria, F. B. Young 349
Radical Treatment of Fistula, Chas. J. Drueck ... 15
Radium in Gynecology, Chas. E. Sayre 168
Radium in Urology, Everett E. Angle 392
Removal of Foreign Bodies From the External Ear 357
Report of a Case of Enlarged Thymus, Hugh O-Donnell 27
Report of a Case of Tetanus, F. P. Dorsey Sr. and F. P. Dorsey Jr. 400
Report of Two Unique Cases, A. C. Stokes 63
Rupture of the Spleen, J. F. Langdon 83
Seminal Vesiculitis, Arbor D. Munger 41
Some Phases of the Tuberculosis Problem, John F. Allen 388
Some Problems in Diagnosis, A. L. Cooper 342
Some Problems in Reconstructive Surgery, Czar C. Johnson 435
Some Studies in Glaucoma, Earl B. Brooks 254
Studies in Atypical Tabes Dorsalis With Leading Points on Diagnosis, A. E. Bennett 310
Subacute Bacterial Endocarditis, J. C. Waddell ... 127
Summary of the Recent Developments in the Etiology and Diagnosis of Scarlet Fever, W. B. Moody 98
Surgeon's Relation to the Newspaper, The, J. W. Duncan 218
Surgery of the Kidney, J. M. Willis 95
Transposition of Stomach, With Report of a Case, John Buis 26
Traumatic Laceration of Lung Without Injury to the Parietal Pleura: Report of a Case, Earl A. Connolly 356
Treatment of Acute Suppurative Otitis Media, H. B. Lemere 59
Treatment of Diabetes Mellitus From the Standpoint of the General Practitioner, The, P. A. Sundbury 61
Treatment of Fractures: A Symposium, Drs. A. F. Jonas, J. W. Duncan, C. H. Waters, Robert D. Schrock, W. L. Sucha, J. A. Weinberg, J. Jay Keegan, A. F. Tyler.
Two Cases of Obscure Anemia, W. D. Lear and M. E. Lathrop 136
Ulcer—Gastric and Duodenal, Wallace A. Gerrie. 23
Unusual Menstrual History in Three Generations, L. J. Owen 224
Unusual Treatment of Ectopic Pregnancy, Miles J. Breuer 401
Urinary Antisepsis—The Clinical Application of Experimental Data, Edwin Davis 466
Use of Hypertonic Salt Solutions in the Treatment of Neurosyphilis, The, J. Jay Keegan and Guy H. Moates 119
Vincent's Angina, A. A. Conrad 48
Why I Dispense My Own Drugs, Miles J. Breuer .. 395

AUTHORS.

Allen, John F. 388
Anderson, A. W. 347
Andrews, Clayton F. 365
Angle, Everett E. 392
Arrasmith, W. W. 294
Becker, W. C. 315
Bennett, A. E. 310
Breuer, Miles J. 56, 178, 395
Brooks, Earl B. 254
Buis, John 26
Campbell, J. N. 52
Cassidy, W. A. 439
Connolly, Earl A. 356
Conrad, A. A. 48, 305
Cooper, A. L. 342
Davis, Edwin 8
Dorsey, F. P. Sr. 400
Dorsey, F. P. Jr. 400
Drueck, Chas. J. 15
Duncan, J. W. 218, 325
Dunn, Arthur D. 1
Emmert, Max 216, 370
Engelbach, Wm. 409
Findley, Palmer 193
Gerrie, Wallace A. 23
Henske, J. A. 353
Howard, M. C. 302
Johnson, Czar C. 435
Jonas, A. F. 325
Judd, W. H. 41
Keegan, J. Jay 119, 200, 325
King, D. D. 220
Kolouch, Frederick G. 174
Langdon, J. E. 83
Lathrop, M. E. 136

Lear, W. D. 136
Lemere, H. B. 59
Levine, V. E. 91, 122, 156, 208, 248, 290, 336, 379
Long, F. A. (Editorials) 30, 32, 33, 66, 68, 69, 104, 105, 109, 144, 145, 148, 149, 182, 185, 226, 231, 277, 358, 361, 362, 402, 406, 444, 446, 447, 448, 449, 483, 484, 486
McCrea, G. I. 176
McGuire, L. D. 297
Moates, Guy H. 119
Moody, W. B. 98
Moon, Chas. F. 163
Munger, Arbor D. 44
Myers, W. A. 415
Neuhaus, Geo. E. 211
Ochsner, Dr. E. H. 138
O'Donnell, Hugh 27
Orr, H. Winnett 181, 434
Owen, L. J. 224
Patton, Jas. M. 426
Philbrick, Inez B. 284
Potts, John B. 237
Pratt, George P. 440
Reid, John D. 134, 179
Roeder, C. A. 41
Sachs, Adolph 419
Sage, Earl C. 113
Sanderson, D. D. 177
Sayre, Charles E. 168
Schrock, Robert D. 325
Smith, Arthur L. 78
Smith, B. A. 132
Smrha, V. V. 88
Stark, Lucien 281
Stokes, A. C. 20, 63
Summers, John E. 37, 373
Sucha, W. L. 325
Sundbury, M. D. 61
Swanbom, L. J. 203
Swenson, S. A. 397
Taylor, J. R. 130
Thomson, J. E. M. 222
Tyler, Albert F. 73, 325, 431
Waddell, J. C. 127
Waters, C. H. 325
Weinberg, J. A. 325
Wilcox, Malcolm B. 100
Willis, J. M. 95
Wohl, Michael G. 153, 442
Young, F. B. 349

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, January, 1925 No. 1

CONTENTS

Page
Diseases of the Heart: A Clinic, Arthur D. Dunn ---------------------------------- 1
Perineal Prostatectomy Under Sacral Anaesthesia, Edwin Davis, M. D., F. A. C. S.- 8
Radical Treatment of Fistula, Charles J. Drueck, M. D.--------------------------15
Gastric and Duodenal Ulcer, Symptoms and Treatment, A. C. Stokes, M. D., F. A. C. S.-----------------------------------20
Ulcer—Gastric and Duodenal, Wallace A. Gerrie, B. Sc., M. D.---------------------23
Transposition of Stomach, With Report of A Case, John Buis, M. D.------------------26
Report of A Case of Enlarged Thymus, Hugh O'Donnell, M. D.-----------------------27

EDITORIALS—

Call for Papers------------------------30
Page
Annual Dues ----------------------------30
The Secretaries and Editors Conference in Chicago ---------------------------30
Fur Dermatitis ----------------------------30
The New President's Greeting---------31
In Appreciation ---------------------------32
Medical Library Service for Nebraska Physicians ------------------------32
The Nebraska State Medical Journal—An Appreciation -------------------32
Editorial Paragraphs-----------------------33
Postgraduate Work in Vienna---------------33
The Gorgas Memorial------------------------34
The Societies ------------------------------34
Human Interest Tales-----------------------36
Necrology ---------------------------------36

DISEASES OF THE HEART: A CLINIC*

Arthur D. Dunn, M. D., Omaha
Professor of Clinical Investigation, University of Nebraska College of Medicine.

I certainly appreciate the honor of being invited to come before you and present a series of heart cases. When Dr. Clough first suggested this to me I accepted with alacrity, but since being here and seeing the array of clinical material afforded I wonder at my temerity at having accepted the invitation. The cases provided by Dr. Willy are of great interest and it is impossible to do justice to them without intensive study.

CASE I:

DIAGNOSIS: SYPHILITIC AORTITIS; AORTIC INSUFFICIENCY

This man is forty-seven years old and is the same patient in whom Dr. Shelden has just demonstrated tabes dorsalis. I shall take up the cardiac phase of the case.

The onset of his cardiac complaint, which brought him to the physician, was eight months ago, the first symptom being shortness of breath; secondly, there was swelling of the "stomach" and of the legs; thirdly, cough, the onset of which was simultaneous with shortness of breath, and easy fatiguability. We ask ourselves, with the knowledge that he has tabes, whether this cough was of a brassy character, such as one hears in aneurysmatic dilatations of the aorta. Fourth, he describes a very peculiar type of breathing, and one wonders from the description given whether it was not of the Cheyne-Stokes type. He says that while going to sleep he "would forget to breathe" and would wake up smothered and struggling for breath.

I will state in the first place that there is nothing of significance in the examination of the head except the stationary pupils. The teeth are good; there is no definite evidence of tonsillar infection and no enlargement of the submaxillary glands. As we look at the patient we see a man who is fairly well nourished but who looks rather older than the age given. We note immediately the distension of the abdomen and the swelling of the lower extremities, which pit on pressure. There is a rather violent arterial pulsation in the neck. There is no particular distension of the veins of the face or neck in the sitting position. His breathing in the sitting position seems fairly easy.

---

*Presented at the Forty-first Annual Meeting of the South Dakota State Medical Association, Mitchell, S. D., May 21-22, 1924.

In the examination of the heart we note that the apex beat lies well without the nipple line, under the sixth rib and in the sixth interspace. On palpation the apex beat coincides with the outer limit of cardiac dullness.

In examining this patient I should like to call your attention to the palpatory method of outlining heart borders. In my experience it is very much more accurate than percussion. I think a great many of us have difficulty in differentiating tone qualities and in differentiating pitch. Phylogenetically this might be explained by the late accession of hearing, palpatory sensation being the earliest thing to which the organism was sensible, unless it be light. I have repeatedly checked myself with the fluoroscope and find that I can outline the heart very accurately with light palpation, while if I attempt to do this by percussion it is not unusual to miss it by two or three, or even four, centimeters.

The enlargement here is very material. The apex lies, roughly, some 10.5 cm. to the left of the midsternal line, while the normal distance should be 7 or 8 cm. The breadth of the heart is about 15 cm. at the fourth interspace, when is should be in the neighborhood of 11 or 12 cm. The aortic breadth in the first interspace is about 9.5 when it should be 7 cm.

At the apex we have a slight systolic blow and a diastolic murmur, blowing in character. These murmurs are heard best at the first interspace on the right and the diastolic murmur is transmitted in the usual way down the left of the sternum.

There is fluid in both chests; there is fluid in the abdomen; there is edema of the lower extremities; the liver by palpation can be outlined fully four finger-breadths below the costal arch in the nipple line.

We have failed to elicit the well-known signs of aneurysm, such as the tracheal tug. There is no difference in the right and left radial pulses as to time, and no palpatory differences as to tension. The blood pressures, however, show a difference between the right and the left, the right being systolic 135 over 90, the left 170 over 90. This discreptancy in blood pressures falls within what one occasionally sees in normal individuals. In a case of this kind, however, especially with the possibility of syphilitic aortitis in mind, one speculates on the possibility of a piling up of inflammatory exudate about the mouth of the innominate, narrowing the entrance to this vessel, thus producing a lessened blood flow into the upper circulatory tree on the right side.

When we endeavor to put this puzzle together, we are forced to the diagnosis of aortic insuffiency; we have the phenomena that belong to that lesion, including the diastolic murmur, which is practically pathognomonic of an aortic insufficency. This diastolic murmur is rather soft, blowing, in character and does not replace to a great degree the second sound. I think it is often difficult or impossible to estimate the size of the lesion in a case with broken compensation, but the evidence in this case points to a minimal, instead of to a maximal, lesion of the aortic valves. If this man has a mild degree of aortic insufficiency, such a degree as we should not expect to produce decompensation from the mechanical defect alone, why has he a broken down circulation? Why do we have an aortic insufficiency in a man forty-seven years, apparently healthy? We find no great increase in blood pressure to account for a cardiac breakdown. We find nothing in the urine to support the diagnosis of a hypertensive nephritis, but in the examination of the blood we find a 4+ Wassermann reaction and therein the probable explanation of our clinical problem.

Let me call to your attention that we have a marked dilatation of the aorta, that it is palpable in the suprasternal notch, and that we have an insufficiency of the valves; and let me remind you again that we have signs of tabes and that we are dealing with a late type of syphilis. The relationship of syphilis to the diseases of the aortic valves in the adult cannot be too strongly emphasized. Probably 80 to 90 per cent of aortic insufficiencies occurring denovo in individuals between 25 and 50 are specific in origin. Therefore, an aortic insufficiency developing in an adult demands a careful examination of the patient for evidence of syphilis. About 1900 Heller and Dohle first made their differentiation of specific aortis from the ordinary arteriosclerosis so commonly found in the aorta. This work was corroborated by Chiari from the pathological standpoint, and later the spirochetes were found in the tissues. It is an old saying that syphilis loves the arteries, and especially is it fond of the aorta. It produces definite lesions, with which I trust most of you are familiar. It is easily differentiated anatomically from the ordinary arterioselerosis. The disease is characterized by a periarterial inflammation, resulting in deposits of mononuclears and plasma cells around the vasa vasorum in the media. This lesion gradually chokes off the nutrient vessels to the media, producing a great deal of inflammatory reaction around the vessels so obstructed, with a hyperplasia in the media. Later necrosis occurs in the area with scarring and retraction. Syphilitic aortas are recognized grossly by these alternating areas of hyperplasia and of atrophy and thinning. The vessel is wrinkled in spots, the color is a metallic bluish white, it has a definite sheen, and has little of the yellowish fatty deposits so characteristic of arteriosclerosis. In the clinic in Vienna in 1904 and 1905 the association of the syphilitic aortas with tabes and paresis was emphasized. At autopsy they expected to find definite manifestations in the aorta in 50 to 75 per cent of cases dying from paresis or tabes.

We hardly need emphasize the importance of syphilis as the cause of aneurysm, because fully 90 per cent of the aneurysms of the aorta are on a syphilitic basis. We looked for aneurysm in this man but could not demonstrate it. The relationship to angina pectoris should not be forgotten. The acute, intense, agonizing type of angina, with retrosternal burning, distribution of pain to the shoulder and down the arm, is particularly likely to be of syphilitic origin. It was on the basis of such cases that Vaquez built his theory of the cause of angina pectoris as being due to irritation in the nerve trunks lying in the adventitia, which theory was later taken up by Allbutt.

This case offers some rather interesting therapeutic speculations. As we stated before, there is not enough of a mechanical element to account for his heart failure. But heart failure, in the last analysis, is always due to a failure on the part of the muscle. The muscle cannot carry the load that is put upon it, whether that load be excessive or whether it be normal or subnormal. In this case we cannot find any unusual load that is being put upon the heart muscle; therefore, it is strange that the heart muscle should be playing out in a man of forty-seven years who has led an active life. I think we are almost forced to assume one of two possibilities: Either the absence of resilliency in the aorta is the cause of the failure, or we have a definite syphilitic mycarditis. It is well known that syphilis can attack the myocardium and that in a definite number of cases typical perivascular syphilitic lesions are found. Syphilis not only attacks the myocardium, but may even attack the pericardium. I have seen a case of hemorrhagic pericarditis in a case of syphilitic aortitis with regurgitation. I could throw on the screen sections from this pericardium and from the same patient's aorta, provided I did not give enough of the aorta to recognize the anatomy, and you could not tell the difference in the pathological lesions. I feel that in that case we are forced to assume that the bulk of the lesion is in the myocardium and that energetic antisyphilitic therapy will do much for this man. It will restore his compensation and in all probability maintain the heart in a state of compensation for many years. It is in such cases that prolonged intensive therapy is most indicated. The antisyphilitic therapy should be energetic. It does not mean a little potassium iodid or a little mercury. He should have many injections of salvarson or neosalvarsan. We have given fifty or sixty injections before satisfactory results were obtained. Dr. Willy asked me whether the neosalvarsan or the salvarsan would be better, and I spoke for small doses of neosalvarsan in the beginning, with mercury, carrying out both methods synchronously. Dr. Willy told of some deaths that had occurred in the Massachusetts General Hospital from salvarsan injections in similar cases. In the small number of cases we have had we have never had any bad results. The difficulty about the mercurialization after the arsenic is the consumption of time. We must contrive so that the disease does not become too much of a burden to the patient. This man will have to have a lot of treatment, and the more we can crowd into a limited period the more likely will he be to stick to it, and the more likely will he be to be able to finance it.

Q. What sized dose of neosalvarsan would you give?

DR. DUNN: A very small dose, not more than 0.15 gm. at first and hold to small doses until sure of tolerance. It may be dangerous to give large doses.

Q. What is the best way to give the mercury?

DR. DUNN: As long as the patient is in the hospital I should give inunctions. It is difficult to get these patients to carry out "rubs" at home, and giving the mercury by mouth is a more or less unsatisfactory, slipshod method. We are at present using intravenous injections of flumerin, a preparation which has recently been brought out by Dr. Hugh Young, of Baltimore, and regarding which there are some very optimistic reports.

CASE II:

CHRONIC HEART MUSCLE INSUFFICIENCY; AORTIC INSUFFICIENCY; ARTERIOSCLEROSIS

This man is sixty-seven years old, but it has been impossible in the time at our disposal to get a connected history of the onset and development of his trouble. He knows he has had high blood pressure for two years, varying from 200 to 160 systolic. For the last two years he has felt "that things were not all right," but there is no definite analysis from him as to how he felt when they were not all right. He said his heart "was wrong;" there has been a sensation of "tightness or pressure" in the heart region, and he said that if he overate it would hurt him or injure him. He tires after half a day's work on his farm.

I should like to emphasize at this point the early symptoms of heart failure. It is easy enough to suspect heart failure when there are symptoms of stasis, such as extreme dyspnea, profound gastrointestinal disturbances, swelling of the feet, orthopnea, and so on. Every patient who complains of fatigue, of tiring at his usual occupation, should be granted a careful examination of the heart and investigation of the circulatory system. This man says if he stooped over his heart would bother him, that he would get a peculiar sensation in the chest. During this past year he began to have shortness of breath on exercise, so you see the symptoms commonly inquired for arrived a considerably time after definite evidence of cardiac disturbance had developed.

(Examining patient.) I feel that we cannot pay too much attention to the examination of the sinuses the mouth and throat in all of our cardiac cases. We are endeavoring to find causes in these cardiac cases and to remove loads. The whole problem is whether the heart muscle can carry the load. Any load that we can remove is worth the effort and all infections must be considered in the light of the deleterious effects on the heartmuscle. This man's teeth are in good condition, and I find nothing demonstrable in the throat. I had my attention very forcibly called to the importance of infections in cardiac conditions in elderly people some years ago, at the time I was making some special studies of syphilitic myocarditis. A man came in with symptoms of heart failure and angina. He had an aortic insufficiency, and a dilation of the aorta, with a 4+ Wassermann reaction. He was sent to the hospital with a diagnosis of syphilitic aortitis, and was treated with neosalvarsan and mercury, but he died. The autopsy showed the syphilitic aortitis and the aortic insufficiency where the syphilis had invaded the valves and produced defects. We were examining all hearts at that time for evidences of syphilitic infection of the heart muscle. In this case, to our astonishment, we found the heart muscle riddled with foci of polymorphonuclear leukocytes, which were due to invasion of the heart muscle by a streptococcus. That man told us definitely that he had a sore throat before his heart failure began, but we had discounted the sore throat.

In examination of our patient we note first the enlargement of the thyroid. This enlargement seems to be quite diffuse, is not nodular, but in the presence of cardiac symptomatology every thyroid should be investigated. In fact, every case of obscure heart failure in middle aged or elderly people should be investigated for toxic adenomata. There is no evidence of such adenomata, and Dr. Willy tells me the metabolic rate is normal, so we can rule out the thyriod as a cause of the heart failure.

The palpable arteries are hard, tortuous, and can be rolled under the finger. The examination of the heart shows the apex well within the nipple line in the fifth interspace. The apex beat is broad and heaving. There is no particular widening of the aorta. At the apex we hear a first sound with a diffuse, rather harsh, systolic murmur, which is transmitted to the axilla. As we travel from the apex to the base of the heart this murmur becomes more marked, and it reaches its maximum intensity when we arrive at the first interspace to the right of the sternum. This murmur is heard well in the fourth interspace in the nipple line on the right, so we are not so much disturbed about the transmission of this murmur beyond the nipple line to the left, for it is heard all over the precordium. Associated with this murmur is a blowing, diastolic murmur. The diastolic murmur is heard best, as is quite commonly the case with diastolic murmurs in arteriosclerosis, in the first interspace to the left. The murmur is harsh; it is rough; it might even be described as somewhat musical in character.

There is no fluid in the chest or in the abdomen, no particular enlargement of the liver, and no swelling of the feet. We have none of the usual signs of cardiac decompensation. We are in the period before decompensation has set in.

The urine, so far as albumin and sugar are concerned is negative. The blood Wassermann reaction is negative.

The diagnosis is chronic heart muscle insuffiicency, incipient to be sure, aortic insufficiency on an arteriosclerotic basis, and a general arteriosclerosis. The aortic insufficiency is established by the pathognomonic diastolic murmur transmitted down the left of the sternum. The aortic diastolic is the one pathognomonic murmur we have. If a case comes to autopsy and you do not find a valvular defect, the aortic insufficiency was there just the same but was due to relaxation of the aortic ring. There is only one murmur, so far as I know, that is heard in this area that can cause confusion, and that is the diastolic phase from the venous bruit in the neck that is occasionally transmitted down to the base of the heart. So in this case we can establish the aortic insufficiency. We cannot establish a leakage in the mitral valve. We have no presystolic murmur or protodiastolic murmur, such as occurs with mitral stenosis, and we must say that the diagnosis of mitral insufficiency due to organic disease of the mitral leaflets is, in this case, extremely hazardous. The diagnosis of general arteriosclerosis is definitely established by palpation of the arteries, which diagnosis is supported by the loud and harsh systolic murmur at the base. Investigation in this case for syphilis should be made. There is no general evidence for that disease. The blood Wassermann reaction is negative. One might drive the point so far, especially if there was anything suspicious in the history, however, as to do a spinal puncture and a spinal fluid Wassermann test in the effort to throw light on the cause of the heart failure. However, this man is sixty-seven years old and in the age in which we get aortic insufficiency from arteriosclerosis.

This case brings up the whole problem of diagnosis and management of hypertension, if we had the time to go into it. Hypertension is the big medical problem of the day. You can pick up numerous articles and be convinced by the theories advanced, unless you happen to know differently. One of the most beautiful articles was brought out by Moschowitz three or four years ago in which he said it was the tired business man, the strenuous individual who did not know how to play, who worked all day and then took his business associates to dinned at night, to the Follies after dinner and to supper after the Follies, who developed hypertension. That was all very fine, but Moschowitz had never seen the large number of hypertension cases we see out here on the prairies in men who have lead a rather cow-like existence, in comparison with their brothers on the stock exchange.

Inasmuch as we do not know the cause of hypertension, our therapy is a makeshift. In the first place, hypertension cases may well afford to spend some time at rest in a hospital. We can then ascertain how much the rest and taking the individual out of his environment affects his hypertension. We can get some idea of the value of work and rest. Secondly, we can estimate the blood urea, and it seems to me this type of case is one in which the blood chemistry is of value. We always have to answer the question of diet, and there would seem to be little value in subjecting a patient to an abnormally low protein diet if there is no urea retention. Again, we can ascertain by careful recording of the blood pressure whether it can be lowered by sodium nitrite. By the use of sodium nitrite we can often drop the blood pressure 30 to 40 points without disagreeable symptoms. We can try the effect of hot baths on the blood pressure. In a study of three or four weeks we can learn a great deal about the therapy of the individual case and make treatment less of a hit and miss game.

I wish to re-emphasize here the importance of infections. We do not know the cause of hypertension or the cause of arteriosclerosis, but it is not unreasonable to assume, from the "patchy" localization of the vessel wall lesions, that we may be dealing with damage due to small thrombi in the finer vasae vasorum. If one studies the early cases, especially with albumin in the urine, especially those with definite mouth and sinus and tonsillar infections, one will occasionally see cases in which after removal of the infection, if the experiment is well carried out and well controlled, there is marked reduction in blood pressure attributable to the removal of the infection alone. In one patient who came under observation we had the tonsils and teeth removed seven years ago for nephritis with hypertension. Five years later the blood pressure was normal, when it had been 200, and the patient was doing full work on the farm. Too frequently we take out infections in the same way as we lock the barn after the horse is stolen. The removal of focal infections in hypertension is always early therapy.

In this case the arteriosclerosis has existed for a long time and the whole question is one of protective therapy. One of the important things in protective therapy is to adapt the individual to his occupation. This man will not be able to farm any longer. Some day we will probably take up the sociologic problem of what to do with people with damaged hearts. If we take a patient into the hospital, get him up and around, and send him back into the type of occupation that will produce decompensation again within a few weeks, we do not accomplish much. I think Dr. Willy will bear me out as to the many cases of decompensation treated at the Cook County Hospital, in Chicago, that redevelop their decompensation within a few days after being discharged from the hospital well compensated.

CASE III:

DIAGNOSIS: PLYSEROSITIS; ADHESIVE PERICARDITIS; OX HEART

In this patient we have a different puzzle. To diagnose it is like trying to reconstruct a prehistoric animal from a jaw bone and a few teeth. This man had "typhoid' at nineteen years of age. He took sick suddenly, was in bed for two or three weeks, and says he does not remember the doctors looking for spots on the abdomen. He was up and around for a short time, he does not remember whether for a few days or a month, before he went to work; then he had a relapse and was in bed for three or four weeks. We question whether this man had typhoid when he was nineteen years of age. He is fifty-one now, so that was over thirty years ago, at a time in which every disease running a febrile course was likely to be diagnosed as typhoid. It is of interest to know that at twenty-one years of age he had shortness of breath and on account of this shortness of breath was unable to work during an entire summer. This trouble was also attributed to typhoid fever. His present symptomatology dates back to 1919, when he first noticed shortness of breath on exercise and pain in the left chest which was sudden and severe. He had but one attack of this pain. The pain radiated up to the left shoulder and was so severe that he was given morphine. Shortly after that he noticed swelling of the abdomen, and then came swelling of the feet. Then he had a dull, aching pain in the right chest. Following that there was development of fluid in the right chest, and he was tapped in 1920 and has been tapped four times in the chest since that time. The abdomen was first tapped in 1922 and has since been tapped three times. We have evident signs of marked decompensation, with anasarca, swelling of the feet, dilatation of the veins of the neck, orthopnea, and dyspnea.

When we examine this man closely we immediately meet with some rather interesting though disconcerting facts. We find that he has a large heart, the apex lying in the sixth interspace, 16 cm. to the left, over twice as far out as it should lie. The heart is 20 cm. broad, or more, at the fourth interspace twice as large as it should be. In other words, we are dealing with an ox heart. The disconcerting feature about all this is that when we listen to the man's heart we find no murmur, no irregularities, rather sharp second sounds, but no sound anomalies indicative of a sufficiently severe cardiac disturbance to cause all of the symptomatology. The blood pressure is 110 systolic, a low instead of a high systolic pressure. The blood Wassermann reaction is negative; the leukocyte count is normal. There is no evidence of infection at the present time. Now comes the problem of reconstruction. The failure we can argue is myocardial; we have the large ox heart. But why has this man, if this dropsy were all due to myocarditis, been as comfortable as he has? A myocardium giving rise to all this anasarca would cause him to be very dyspneic and very uncomfortable. We shall possibly show another case that has no such amount of anasarca, but who is very miserable; so it is impossible to say that myocardial failure is responsible for the whole thing. One of the first things to think of is, are we not dealing with a chronic adhesive pericarditis with associated phenomena? There are three clinical types of chronic adhesive pericarditis. In the first type the adhesive pericarditis is a chance finding at autopsy. The second class of cases in which adhesive pericarditis figures is the type in which there is a tethering fore and aft, with adhesions to the sternum on one side and with adhesions to the diaphragm, to the chest wall and to the spine on the other. These are usually diagnosed easily. They have the Broadbent sign, the diastolic shock, the pulling in of the costal arch, and the tugging of the epigastrium. They are the type of which the trouble is due to the extra load of mobilization of the chest wall at every heart beat. This is the type in which the Brauer procedure, is of advantage in untethering the heart and allowing the heart to mobilize, instead of bony structures, soft structures at each beat. Finally, there is the third type, the one associated with polyserositis. The pericardium is adherent, but does not give the classic signs,—The Broadbent sign, the diastolic shock, and so on. The infection attacks the other serous membranes, especially the peritoneum and pleurae, produces the sugar-coated or iced liver,—the liver of chronic perihepatitis. This is the condition that is usually diagnosed in this country as Pick's cirrhosis, although a misnomer.

In this case the first thing was pain in the chest, then swelling of the abdomen and feet, and tapping of the chest, which argues very strongly for this conception of the disease. Furthermore, rest and digitalis—of both of which he has large quantities—have not lead to disappearance of the anasarca. Since the beginning of the trouble, some four years ago, the man has never been free from the swelling. (It would seem not unlikely that examination of the fluid might even now show evidences of inflammatory trouble.) In this case from a survey of the clinical facts, from the absence of evidence in the heart sufficient to cause the picture, from the sequence of events dating from the early age of nineteen and from the persistency of the trouble in spite of treatment, we are inclined to hazard a diagnosis of chronic adhesive polyserositis with adhesive pericarditis.

Q. What kind of treatment would you suggest?

DR. DUNN. I know of nothing except repeated tappings. It might be said in the early stages that prolonged rest with sodium cacodylate intravenously seems to be beneficial. I have carried several cases of acute polyserositis through with the administration of rest and of arsenic over long periods of time. These cases have usually cleared up and have remained well. I do not know what they would have done without treatment. We have seen the temperature repeatedly become normal after several days' administration of sodium cacodylate, and after its discontinuance we have seen a rise in temperature. In several instances the experiment has been repeated several times on the same patients so that the experiment was sufficiently well controlled to impress one with the probable value of the drug.

CASE IV

DIAGNOSIS: CHRONIC ENDOCARDITIS (MITRAL INSUFFICIENCY)

This man is forty-nine years of age and gives a history of having been sick for two weeks with "rheumatism" when he was twenty-two years old. A heart murmur was discovered twenty years ago, and on the basis of this murmur he was refused life insurance. In the interval between then and the time he was forty-nine years of age he had had no symptoms except some shortness of breath on violent exercise. He was seen by Dr. Willy on March 7, 1924, because he had noticed shortness of breath and failure of strength three weeks before. His chief complaint was shortness of breath on slight exertion and "winter cough." "Winter cough" is always suspicious. He could not go upstairs without difficulty; he has had no real pain, but a dull ache in the precordium.

(Examining patient.) In the examination of this patient there are several things of interest. First we find a very bad mouth with a number of crowns and a large amount of restoration work and an unhealthy condition of the gums. Second, there is definite evidence of tonsillar infection, with liquid pus coming from the left tonsil, with slight enlargement of the submaxillary glands. There is no history of trouble in the sinuses, but they should be investigated. The blood pressure and the elasticity of the arteries are normal; the heart is moderately enlarged. Examination of the urine shows it to be normal.

I shall not go into the detailed examination of this man, but will state that he has a systolic murmur at the apex and that we have to hazard the diagnosis of mitral insufficiency. Pure mitral insufficiency is a bad diagnosis to make because if we expect to corroborate it at autopsy in the majority of cases we will be disappointed, because with out evidence of stenosis at this orifice, systolic murmurs, which are endocardial in origin and which are attributed to the mitral area, are usually due to auriculoventricular ring insufficiency. However, in this case, we have cardiac enlargement without any other cause to explain it; we have an accentuation of the second sound; we have the history of this murmur existing twenty years ago, and we have the knowledge that the murmur has remained constant during a long rest period under Dr. Willy's care.

The diagnosis, however, of mitral insufficiency is, in my opinion, insufficient. We have said nothing about this man when we say he has a mitral insufficiency. We have said nothing about the patient, we simply mention the existence of a definite mechanical fact. We have said nothing about the work-capacity of this man's heart. It is just as important to say that I have a scar on my thumb. The question is, is the thumb all right? Can I use it like a normal thumb? If so I should "forget" the scar. The same logic applies to hearts: valvular lesions should serve to draw one's attention to the fact that something has happened or is happening. I believe Lewis says that to diagnose mitral insufficiency and be correct is to diagnose it in the presence of either aortic insufficiency or mitral stenosis, or both. This man has carried this murmur most of his life. There have been no symptoms of any kind, and the mechanical load has been the same. What has happened? The man's heart failed last winter. What caused it? He has not undergone or suffered particular strain, or worry, or unhappiness. The most logical thing we can assume is infection, and we ask: has some infection so affected this heart that it can no longer carry a load which it has carried easily for nearly thirty years? This patient has not progressed on rest and digitalis as well as the doctor expected, so one is forced to first gamble on the most apparent infection,—his tonsil infection. Liquid pus expressible from the left tonsil was noted in our examination. We can treat him along with a certain amount of rest, but he does not like that. That will have to be done, however, if we do not strike at existing infections. We have had experience in a sufficient number of instances to justify us in advising a gamble on any demonstrable infections in the hope that therein lies the reason that the heart muscle is failing: we must never forget that many instances of disturbed heart action are due to causes outside the heart itself. Sinus trouble many times causes this disturbance. I have had this borne in on me in a way that I never shall forget. Shortly after I started the practice of medicine I caught a cold, which resulted in sinus disturbance. I was having chills and fever in the afternoon. This occurred after the disappearance of a postmortem infection which had extended along the lymphatics of my arm as far as the axilla. One afternoon the doctor who was treating my nose told me to go home and take ten grains of quinine and a drink of whisky. I told him that whisky and quinine did not agree with me, but he insisted that I should go home and take it. That night I had the classical symptoms of acute heart failure. The next morning "malignant" endocarditis was diagnosed, and I was sent to Chicago to go under the care of Dr. Herrick and Dr. Irons, because they were at that time developing vaccines for endocarditis. After several days observation they could not confirm the diagnosis of streptococcic endocarditis because the murmur had disappeared. Later a maxillary sinus showed up, and the heart trouble was stopped immediately by a sinus drainage.

CASE V:

DIAGNOSIS: SUSPECTED MYOCARDIAL DISTURBANCE, DUE TO TONSILLAR INFECTION

This little chap is of interest. He is four years old. There is nothing in his history except an attack of measles and after that a slight systolic murmur or rumble at the apex. The rumble is not entirely systolic and is suggestive of a presystolic murmur. The question is, what does this rumble mean? The child is well, and the murmur was found accidentally upon examination. The murmur does not belong there.

(Examining the patient.) Examination shows nothing but edematous, mushy tonsils, and diffuse enlargement of the submaxillary and anterior cervical chains of glands.

The law of probabilities demands the removal of tonsils, even at this early age, as a preventive measure in the light of the two cases to follow.

CASE VI

DIAGNOSIS: RHEUMATIC MYOCARDITIS

This chap is of the same type as the last case. He was seen on December 23, 1923, with an attack of acute rheumatism, which was mild. This was preceded about one month by sore throat. For three or four months preceding the rheumatism the child had been pale, had fatigued easily, and did not look well. He had a blowing, systolic murmur at the apex, without a diastolic murmur, and slight fever. The leukocyte count was 12,100 on one occasion, and on another it was 10,400. The hemoglobin was 70 per cent. He was kept in the hospital under observation for a month, and the infected tonsils were removed about the 10th of January, 1923.

At present one cannot convince oneself that there is anything abnormal in the heart sounds. We ask ourselves the question, did he have endocarditis? One could argue that he did not. Dr. Willy thinks he did. It makes little difference whether he did or did not, for whatever he had has disappeared on removal of the tonsil infection. The murmur he had might just as well have been due to heart muscle disturbance. We must not forget that most of our cases of rheumatism have myocarditis, whether it is susceptible of clinical demonstration or not. At present the patient is well, and runs about and plays as a normal child. He does not know he has ever been sick. I think this is an example of the highest type of service to a patient. Had the infection not been removed such a condition might easily develop, as I shall show you in the next case.

CASE VII:

DIAGNOSIS: CHRONIC ENDOCARDITIS (AORTIC AND MITRAL VALVES)

This lad has not been by far so lucky as the two cases just seen, in which great possibilities of trouble were forestalled.

This lad eight years ago had pain in his legs and ankles which were supposed to be "growing pains." We always have to be suspicious of "growing pains;" they mean infection. He had had two attacks of tonsillitis and with these two attacks of tonsillitis had "growing pains." He was not well eight years ago, and in the light of what we see to-day the probability of endocarditis existing at that time is strong. The history tells us that he had fever every few days which lasted for several days each time. His heart trouble was discovered three years ago, after an attack of influenza. He now tires easily, is dyspneic on exertion—even slight exertion,—and has palpitation. The hemoglobin is 85 per cent, the red cells 4,060,000, the white cells 4,800.

(Examining the patient.) The teeth are normal There is definite infection in the tonsils; they are somewhat retracted, there is cheesy and hemorrhagic material in the crypts; the anterior pillars are injected. There is no great enlargement of the submaxillary glands.

We find a slight presystolic thrill at the apex, a presystolic blowing, and a presystolic rumble at the apex; a marked water-hammer pulse; a Durosiez sign, a violent beating in the precardial region even suggests adhesive pericarditis, although we cannot demonstrate its existence. The boy is on the brink of heart failure.

These three cases bring home to us the role of infection in producing organic cardiac disease in children. I think you will all agree with me that in the last five years we are seeing fewer of these hopelessly crippled hearts than we did twenty years ago. I can remember in my interne days that the wards were crowded with this type of case, but it is ratner an exception today to see such a badly damaged heart. This case dates back eight or ten years; it is only within the last few years that our knowledge of the effect of infection on the heart and its diseases has become well broadcasted. The last three cases illustrate the fact that a good conception of heart disease is the best thing a doctor can bring his patient. I would prefer to have a man see me who has a good conception of heart disease than I would a man who is provided with all the modern appliances and instruments of precision. It is the conception of heart disease that was brought to the little lad whose murmur has disappeared and to the little child first seen, that is of paramount importance to these children. As I said before, it is the conception of our circulatory organs and the view we take of cardiac cases that is important. I wish to take a moment of your time to emphasize the importance of circulation to the entire body. We must remember that every cell lives in a very definitely composed biochemical medium. That these cells, so far as their activity is concerned, are extremely sensitive to the biochemical influences of their environment. Carbon dioxid must not be allowed to go above a certain level and oxygen must not fall below a given level if they are to function normally. The sugars, the salts, the fats, must be there in suitable appropriate amounts to provide and control energy production; protein must be there for repair. The transportation system is the circulation and for correct, efficient, organ function, transportation must not fail. Disturbances of the circulation may have the most far-reaching effects on the individual and on society. I think we might well query whether the low price of wheat in South Dakota and some of our troubles in collecting fees might not be attributable to circulatory disturbances in the brain of Woodrow Wilson in 1919. Mr. Wilson was known to have had a high blood pressure. He was unable to cope with the diplomats at Paris in a manner that might well have been expected of him. He brought home a treaty of peace which was unsatisfactory. He suffered a cerebral hemorrhage some months later, and it is probable that from inadequate circulation his cerebral cells failed in the quality of their output.

Just a word in regard to treatment, as the hour is late. We all know the treatment of decompensation. We know too little about the prevention of cardiac damage by the removal of infection. Finally, we pay too little attention to the adjustment of the cardiac patient to his environment. We tell him to rest and to take things easily, but we do not teach him how to take things easily. It is a sad commentary that there is little available literature to put into the patient's hand that will teach him how to rest and how to take care of his cardiac deficiencies.

In closing I wish to thank Dr. Willy and his confreres for such an excellent display of well worked up, well-treated cardiac cases.

—630 Bankers' Reserve Bldg.

PERINEAL PROSTATECTOMY UNDER SACRAL ANAESTHESIA*

Edwin Davis, M. D., F. A. C. S., Omaha

Local anaesthesia as applied to general surgery has its chief advantage in the elimination of post-operative shock and other dangers incident to the use of ether or gas. In this respect the patient is directly benefited. A second advantage, of great indirect benefit to the patient, is that received through the opportunity for time and deliberation afforded to the surgeon. Under local anaesthesia there is no urgent indication for haste. The operator proceeds more carefully and deliberately with his dissection, he is able to avoid trauma to tissues and has the opportunity for better exposure and hemostasis. And finally, the first few post-operative days following local anesthesia are accompanied by far less discomfort and gastrointestinal disturbance.

The disadvantages of local anaesthesia and the objections to its use should be also taken into consideration, for this method is not without its dangers and its remote mortality, due chiefly to the possibility of toxic absorption. Furthermore, there are patients whose mental make-up is such as to entirely preclude the successful employment of local anaesthesia; and there are many operations of such extent and with such anatomic relations as to essentially require a general anaesthetic. The chief hinderance, however, to the more general adoption of local anaesthesia, and to the development of this method to a wider field of usefulness, is due in a large measure to the reluctance of the average busy surgeon to devote the time and careful attention essential to its successful application.

There are obvious reasons why arguments in favor of local anaesthesia should apply particularly in prostatectomy. Primarily, this operation deals with old age; often with advanced old age with the accompanying cardio-vascular and renal changes; to say nothing of the renal injury resulting from chronic urinary retention and infection. These patients are, therefore, doubly handicapped, and to recover must survive the combined ill effects of operative trauma, infection and hemorrhage. The elimination of the added insult of general anaesthesia is, therefore, well worth the effort.

DEFINITION

Of the various methods of administering local or regional anaesthesia for prostatectomy, none is so simple in its technique, so free from dangers or sequelae and so relatively dependable as is the sacral method. Inasmuch as there exists a confusion of terms and ideas relative to the exact anatomy concerned in the technique of sacral anaesthesia, it is well to exactly define the term as here used; and above all it is essential to distinguish clearly between sacral and spinal anaesthesia. The spinal injection is given within the spinal canal into the subarachnoid space, where it mingles with the cerebrospinal fluid. This method involves a certain definite mortality, admitted by its most enthusiastic advocates. The sacral method differs essentially in that the injection is extradural, and in that the mortality is a negligible factor. An estimate as to the infrequency of mishap following the sacral or extradural injection may be obtained from the work of Zweifel (1), analyzing the reports of ten fatalities occurring among 4200 cases, and concluding that in only three of these was the anaesthesia responsible. In these three, death was almost immediate, resulting apparently from acute procain poisoning.

One may thus distinguish clearly between spinal and sacral anaesthesia, and yet be somewhat confused as to the exact meaning of the term "sacral anaesthesia," on account of the variety of terms applied to the different forms of technique used in blocking the sacral nerve roots within the sacral canal or foramina. The parasacral, presacral or anterior sacral method refers to the use of a

---

*From the Department of Urology, University of Nebraska College of Medicine. Read before Nebraska State Medical Association, May, 1924.

long needle inserted through the perineum, to either side of and parallel to the midline, and blocking the sacral nerves as they emerge through the anterior sacral foramina into the concavity of the sacrum. These nerves may be seen in figure 1. This method, however, is difficult of execution and uncertain in its results and need be here given no further consideration. By the trans-sacral or posterior sacral method the nerve roots are anaesthetized within the foramina by means of five injections made on either side through each of the posterior sacral foramina. (See needles 1, 2, 3, 4 and 5 in figure 1,. The epidural or caudal injection is given through one needle inserted into the sacral canal through the sacral hiatus (See H, Fig. 1), which is the small gap or opening resulting from failure of fusion of the laminae of the fifth sacral segment. It is clearly indicated in figures 1 and 2 that this injection is given into the sacral canal, and not into the dural sac (D) which terminates above, at the level of the second sacral segment.

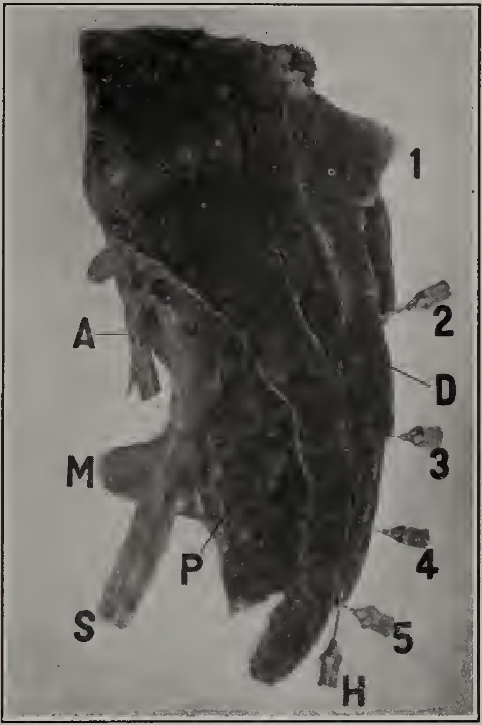


FIGURE 1
Sagital mid-line section through sacrum, coccyx and fifth lumbar vertebra, showing dural sac and sacral canal: D, dural sac, terminating at level of lower border of second sacral segment: H, needle introduced through sacral hiatus into sacral canal (epidural anaesthesia): 1, 2, 3, 4, and 5, needles introduced into posterior sacral foramina (trans-sacral anaesthesia); P, sacral plexus; S, sciatic nerve; M, pyriformis muscle; A, internal iliac artery.

Theoretically, either of these last two methods, the trans-sacral or the epidural, should accomplish the same purpose; that is, the saturation of all the nerve roots in novocaine solution. For practical purposes, to make more certain of a complete and thorough permeation of the drug, it is well to use a combination of these two methods, injecting the sacral canal through the sacral hiatus (epidural) and the upper four posterior sacral foramina upon either side (trans-sacral), The term sacral anaesthesia" as here used, therefore, refers to the combined epidural and trans-sacral injections.

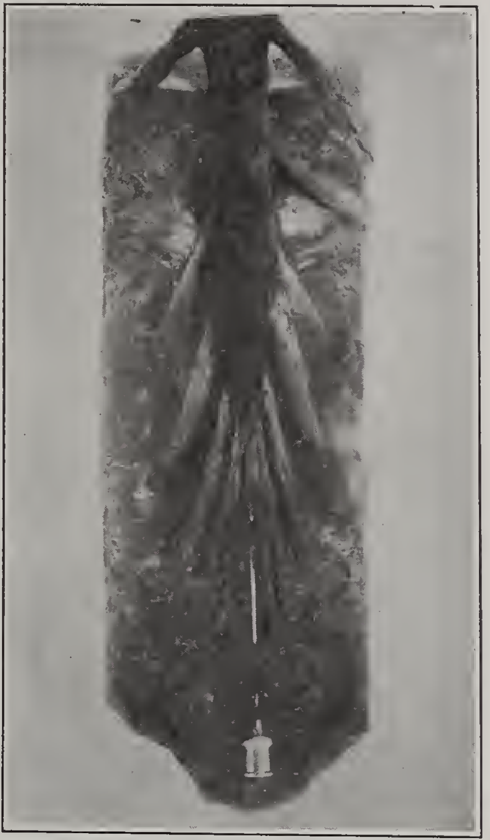


FIG. 2
Photograph of anatomical dissection with dorsal portion of sacrum removed, showing termination of dural sac, and the nerve roots entering their respective foramina. It is clearly indicated that the position of the needle is extra-dural.

LITERATURE

Since the chief purpose of this paper is to direct attention to the value of sacral anaesthesia in prostatectomy, a detailed consideration of the literature pertaining to sacral anaesthesia would here be out of place. Furthermore this subject has been admirably covered by others, particularly by Scholl (2) and more recently and quite elaborately by Meeker (3), to whom the reader is referred for details of technique. Credit is due Harris (4) for early directing attention in America to the possibilities afforded by sacral anaesthesia. During the following year (1916) appeared a paper by Lewis and Bartels (5) describing the value of this method as applied particularly in urological operations and manipulations, and including an analysis of eighty-five cases, thirteen of these being suprapubic prostatectomies. Crowell (6), in 1922 described the use of sacral anaesthesia for perineal prostatectomy, hence no priority for this method is here claimed.

TECHNIQUE

Although details of anatomy and methods of injection have been elaborately covered by others (3), a brief outline of the practical technique of the administration of sacral anaesthesia is here included. A freshly sterilized one per cent solution of novocaine gives satisfactory results. Various additional drugs used by others may or may not be of benefit, but certainly are not essential. Those interested in the literature will find also a wide variation in opinion both as to concentration and amount of novocaine solution.

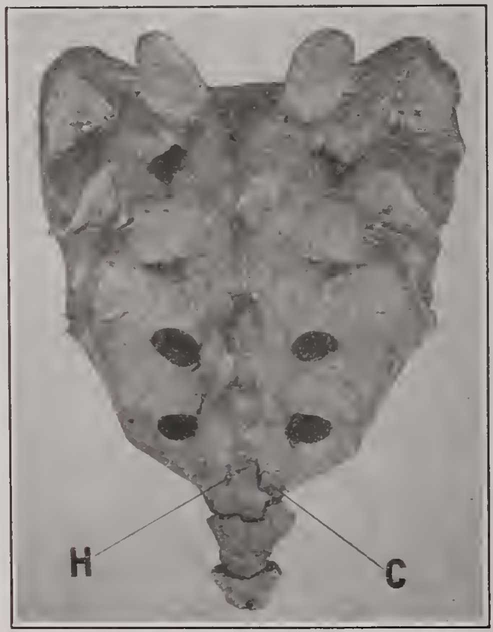


FIG. 3
Photograph of the dorsal surface of an average sacrum. Note irregular variation in size and direction of posterior foramina, with overhanging bony lipping around the upper two. C, cornua, H., hiatus.

The injection is best made with the patient lying flat on the abdomen, with a small pillow under the hips. Since the sacral segments are fixed, there is no advantage to be gained by the lateral position with acute flexion. In obtaining results the injection of the sacral canal is more important than is that of any of the foramina, and fortunately this is the easiest of localization. In the average case the sacral cornua, indicated in figure 3, may be palpated with comparative ease. It will be recalled that these cornua are present as the result of the failure of fusion the lamina of the fifth sacral segment, and the sacral hiatus or opening into the sacral canal, therefore, lies between these two landmarks. A small-calibre needle of the type ordinarily used for spinal puncture well serves the purpose. The introduction of this needle is best preceded by the production of a dermal wheal of novocaine with a fine hypodermic needle, in the mid-line and just below the level of the sacral cornua. Faulty direction of the needle is the cause of more failures than is improper location of the point of introduction. The needle is best maintained at an angle of about forty-five degrees with the skin surface until the point is felt to penetrate the fibrous membrane covering the sacral hiatus and to strike the bony floor of the sacral canal, 2 or 3 mm. beyond. The operator's end of the needle is then markedly depressed until the shaft comes to be approximately parallel to a tangent to the curve of the sacrum at the point of introduction. As the needle is further introduced it may become necessary to slightly elevate or to further depress the end in order to prevent the point from striking the roof or the floor of the canal. A glance at figure 1 will show that the curve of the canal makes a tapping of the dural sac almost an impossibility. I have never seen this occur. Yet there have been a few cases reported, and it should, therefore, be routine to watch for the appearance of cerebrospinal fluid during a short interval of time between withdrawal of the stylet and injection of the novocaine solution. In the series here reported the routine amount injected into the sacral canal has been 40 cc. This should be injected slowly. As pointed out above, it is essential that the fluid flow in freely and easily, with no force upon the plunger necessary. In fact, since the necessity for force indicates an improperly placed needle, the ease of introduction of the fluid is an accurate index of the success of the anaesthesia.

The location of the posterior sacral foramina is usually more difficult. This should be practiced upon the cadaver. The operator is aided by the anatomical fact that the openings of the sacral foramina upon either side all lie in the same straight line, and that for all practical purposes they are equidistant from one another. In the average individual the posterior superior iliac spine may be readily palpated, and the second sacral foramen located at a point about two cm. toward the mid-line and one cm. below. The line of all five foramina may be then determined by connecting the above-described point with a point located just outside of and below the sacral cornu upon the corresponding side. This latter point locates the notch for the fifth sacral nerve, the injection of which may be omitted in case the epidural injection has been successful. The division of the distance between these two points into three equal parts will locate the sites for injection of the third and fourth foramina. The first may be located a corresponding distance above the second. Here again, the direction of the needle is of importance. Each needle should be introduced at approximately a right angle to a tangent to the curve of the sacrum, rather than perpendicular to the skin surface. Ordinary Luer needles, about 18 gauge and 2 in. in length will well serve the purpose. It is convenient to use several. The introduction of each needle should be preceded by the production of a dermal wheal with a fine hypodermic needle. A foramen will rarely be located by the initial stab. It is seldom necessary, however, to make more than a single skin puncture, for the reason that it is possible to "feel" the bony surface of the sacrum as the point of the needle comes in contact at several closely related points, before finally dropping into the foramen. Figure 3 is a photograph of the dorsal surface of a sacrum which happens to illustrate the not infrequent irregularity in size and direction of the posterior foramina, with consequent difficulty in the introduction of the needle. As will be seen, the third and fourth foramina are wide and round and easily approachable, while the first and second are narrow and slit-like, with over-hanging bony lips. The introduction of the needle into the foramen a distance of 1 to 1½ cm. below the dorsum of the sacrum is sufficient. A close scrutiny of figure 2 will indicate the severed ends of fair-sized vessels accompanying the nerve roots through the foramina. It is, therefore, well to allow a short interval of time before injection to await the possible appearance of blood through the needle. Upon these few occasions the needle has been withdrawn slightly and the injection made, with no ill-effect. In accordance with Meeker's technique, the routine here used has been the injection of approximately seven, six, five and four cc. of one per cent novocaine solution within the first, second, third and fourth foramina, respectively. The skin incision should be postponed for a period of not less than thirty minutes after the initial or epidural injection.

THE FITNESS OF SACRAL ANAESTHESIA FOR PERINEAL PROSTATECTOMY

The structures included in the region anaesthetized by the sacral method are perineum, urethra, rectum, prostate and base of bladder. Hence the sacral method offers a form of anaesthesia ideally adapted to prostatectomy by the perineal route, since no additional infiltration anaesthesia is required. Sacral anaesthesia for suprapubic prostatectomy has been widely used in combination with infiltration anaesthesia of the abdominal wall, as referred to by Hunt (7) in 1921, and later by Judd and Meeker (8). It would be out of place to here enter into a detailed discussion of the relative merits of the perineal and suprapubic routes of approach. Considering the subject merely from the viewpoint of local anaesthesia, the perineal route eliminates the necessity for infiltration of the abdominal wall, which is a decided advantage, particularly in those cases with existing suprapubic fistulae and with consequent urinary saturation of the abdominal skin. Furthermore, the second approach to the bladder through scar tissue is never as easily accomplished or as satisfactory as the first. The perineal operator claims better operative exposure, better opportunity for hemostasis, less blind trauma, less post-operative shock and intestinal disturbance, better drainage and wound healing, easier nursing care, a shorter and a more smooth convalescence, and better functional results. In many respects the suprapubic claims are directly contradictory and it is to be expected that this difference of opinion will always exist. In the last analysis it is probably true that the perineal operation promises less post-operative shock and risk, but involves greater technical difficulties on account of the danger of rectal injury and of post-operative incontinence. In most cases equally good results may be obtained by either route, provided that the operator is equally skilled in either method. Without question, the suprapubic is the easier.

FAILURES

Probably the most serious objection to sacral anaesthesia is the fact that there occurs a certain small but constant percentage of failure to obtain complete anaesthesia. There are several factors tending toward poor or indifferent anaesthesia which may be eliminated by careful technique. Certain cases of failure are due to the fact that the operator has not succeeded in introducing the needle through the hiatus and into the lumen of the sacral canal. It is even possible to make the mistake of giving the injection into the subcutaneous tissues dorsal to the sacrum. It is essential to remember that when the end of the needle is properly placed within the canal the fluid will flow freely, and will require no pressure upon the plunger of the syringe. Those cases in which forceful injection is necessary, are those of failure to anaesthetize. It is likely that in some of these cases the tip of the needle is within the canal but under the periosteum, because rotation of slight withdrawal of the needle will sometimes permit free introduction of the fluid. Another common error is the omission of an interval of time between the injection and the incision. Unsuccessful anaesthesia will be obtained unless a period of thirty to forty minutes be allowed to elapse, which probably represents the time necessary for the penetration of the dural sheaths of the nerves.

Proper selection of cases, and pre-operative hypodermic narcosis when necessary, will largely reduce the percentage of so-called failures. There are those individuals whose mental attitude is such as to render impossible the use of local anaesthesia for any purpose whatever. Such patients draw no distinction between fear, and the discomfort of the position on the operating table, and actual pain. Preliminary narcosis with morphine and scopolamine, while not essential as a routine for the patient of average intelligence, is of great value in eliminating the difficulties due to fear and apprehension.

RESULTS IN PERINEAL PROSTATECTOMY

In the series of thirty-six cases of perineal prostatectomy under sacral anaesthesia here reported, there have been no post-operative sequelae or poor results attributable in any way to the anaesthesia. Wound healing has been uniformly good. From the viewpoint of the success and the completeness of the anaesthesia, results have been classified as follows:

1. Perfect—Manipulations as painless as with general anaesthesia.
2. Good — Slight complaint, associated with discomfort due to lithotomy position, but inhalation anaesthesia not necessary.
3. Fair—Incision and manipulation of exposure painless, but pain produced in last stage of operation as result of traction and trauma incident to enucleating lobes, and requiring temporary gas inhalation.
4. Failure—Little or no local anaesthetic effect obtained, probably as result of faulty technique. General anaesthetic necessary throughout.

According to the above classification, in twenty-seven among the series of thirty-six the anaesthesia was perfect, in two the results were good, in four, fair, requiring the aid of gas inhalation during the brief period of trauma and traction associated with enucleation, and the remaining three were complete failures. The cause for complete failure to obtain anaesthesia could not be accurately ascertained, but it is only reasonable to suppose that the difficulty lay in error in technique, due to failure to properly introduce needles into canal and foramina.

It is to be noted that the cases of complete failure to anaesthetize occurred comparatively early in the series, indicating a lack of familiarity with the exact technique of injection. Later, as technique has improved, the anaesthesia has been more uniformily satisfactory. In the last eight consecutive cases, all manipulation, including the trauma and traction of enucleation, has been as completely painless as under general anaesthesia. These eight, together with the preceding nineteen, make a total of twenty-seven cases in which the anaesthesia may be without exaggeration referred to as perfect .

The mortality of sacral anaesthesia is a negligable factor. In a series of one hundred and twenty cases, in which I have employed this method for various urological manipulations, there have been no ill effects whatever. This record tallies with that of several series of approximately similar size reported by others. Among the thirty-six prostatectomies here reported, there were two late post-operative deaths, both of which might well have been avoided by better statistical foresight, since the age and physical condition of each of these patients was such that one would have been fully justified in refusing operation. One of these was a man of 77 with complete urinary retention, and with a renal function well below the level of safety, and which failed to satisfactorily improve even after three months of continuous drainage. This patient did well temporarily, but died in sepsis on the tenth day. The second death occurred in a patient aged 91, with a fair renal function, and with no apparent cardiac disturbance. His post-operative condition was splendid until within five minutes of death which occurred very suddenly and which was preceded by respiratory symptoms such as to suggest pulmonary embolus. Necropsy in this case was negative.

HEMOSTASIS

As will be referred to in a subsequent paper entitled "bloodless perineal prostatectomy," and dealing with the complete and accurate control of hemorrhage during and following operation, the sacral anaesthesia is of great value in furthering this purpose. It is well known that so-called post-operative shock is too often merely an indication of loss of blood, and tends to be eliminated as hemostasis is perfected. Therefore, to minimize hemorrhage is to lessen mortality. In this respect the local anaesthesia is of great value in affording opportunity during the operation for accurate ligation or suture of bleeding points, both outside and within the prostatic capsule. Complete post-prostatectomy hemostasis may then be obtained by use of a distensible rubber bag designed with the idea of checking hemorrhage and at the same time providing for urinary drainage. After the completion of the enucleation this bag is introduced through the prostatic capsule and internal sphincter where by virtue of its shape and by means of distention and traction, it is maintained in such position as to replace the prostatic lobes. The distention is released and the bag collapsed after several hours, and removed the following day. Complete hemostasis may thus be provided for without the use of gauze packs.

CONVALESCENCE

As outlined above, there is great satisfaction to the surgeon during the operation in the knowledge that time for operative deliberation and hemostasis may well be afforded without danger to the patient. Consequences and complications resulting from prolonged anaesthesia need be given no consideration. Of greater importance, however, is the fact that with sacral anaesthesia, these patients pass through no period of post-operative shock. Their condition upon returning to bed, as measured by pulse, respiration, color and general appearance, is not essentially changed from that prior to operation. To observe one of these patients reading or eating during the afternoon following operation is not unusual. Furthermore, the sum total of post-operative discomfort and pain is less, presumably due to a persistent analgesic effect. The pain caused by the removal of the hemostatic bag twenty-four hours later (and the gauze, if any) is in no way comparable to the pain produced by a similar procedure following general anaesthesia. In the series of thirty-six, the average number of days before (1) sphincter control, (2), urethral voiding and (3) closure of the perineal fistula was five, seven and twenty-one, respectively. There is, therefore, no reason for supposing that the sacral anaesthesia interferes in any way with wound healing or with the return of the normal function of urination.

CONCLUSIONS

1. The physical condition of the average candidate for prostatectomy is such that the use of local anaesthesia is preferable.

2. Sacral anaesthesia differs essentially from spinal anaesthesia in that the injection is extradural and in that there is no appreciable mortality.

3. The complete operation of perineal prostatectomy is easily possible under sacral anaesthesia, without local infiltration, without the aid of inhalation anaesthesia, and without pain.

4. With the elimination of the necessity for haste required with general anaesthesia, the operator is afforded the opportunity for careful deliberate dissection and accurate hemostasis.

5. The post-operative shock and the risk incident to general anaesthesia are eliminat-

ed, and post-operative discomfort is minimized.

6. There are no delayed ill-effects, either general or with regard to wound healing.

7. Contra-indications or objections to the use of a sacral anaesthesia are two in number as follows:

   a. The injection of the sacral canal and foramina requires a fair degree of technical skill and practice, and the method is time-consuming in that an interval must elapse between injection and incision.

   b. There occurs the very occasional case of inexplicable failure to obtain satisfactory anaesthesia.

DISCUSSION

E. E. ANGLE, M. D., (Lincoln, Nebr.): I have had experience with fifty of these cases of sacral anaesthesia. It has enlarged the number of cases which will stand operation. One case was sent home with just the suprapubic cystotomy because he would not stand the shock of the second stage. After doing two or three sacral anesthesias, we called the case back. He went through the operation without any shock.

The morning following operation you find these patients are apparently in better condition than the morning before operation, which is the true test.

There is a danger in trans-sacral injection. The needle may be introduced too far and puncture either the bladder or rectum.

L. E. MOON, M. D., (Omaha, Nebr.): I think we are indebted to Dr. Davis for bringing out these points on sacral anesthesia, because it is one of the advances that has been made with perineal work of any type. I have had a little experience with it and find it is very successful in most perineal operations.

I would like to have the Doctor bring out in the cases in which he had absolute failure as to whether he used trans-sacral injection also, because I find the number of failures which Dr. Davis cited in the beginning to run about the same—anywhere from 13 to 17 per cent in which we do not get a good anesthesia. Of late I have been using trans-sacral injection with it, and have had no failures with that. I am anxious to know if he uses trans-sacral injection along with that?

Another point I would like to know about is whether he is using adrenalin, and as to the effect? I find this with the use of adrenalin: I do not use it and get more bleeding as a result, but I do not think more bleeding is a contraindication. I think it is a good thing in that we can control the hemorrhage during the time of the operation, and it does not have to be controlled later.

As far as haste is concerned. I sometimes question whether that is an element to be considered. I think the average paper states sacral anesthesia lasts from forty-five minutes to one hour and twenty minutes, but most of them are wearing out very decidedly in forty-five minutes. Unless a man has the technique down to a fine point, he must work right along. The question of haste does not enter a great deal.

Dr. EDWIN DAVIS (Closing): I had rather a broad subject to cover and, therefore, did not go into detail as to technique of injection. As Dr. Angle brought out, and Dr. Moon, also, this method has a wide field of application, not only in perineal prostatectomy, but operations in the lower bowel and all urological manipulations. It is a valuable procedure and I think it has a future.

Dr. Moon inquired about the failures and the use of the trans-sacral injection, in addition to the injection through the sacral hiatus. There are certain factors which enter into producing these failures, and we have fewer of them as we have more experience. Replying to the question, in these cases where I had failures, I did inject the sacral foramina, or I tried to. That is not as easy as it looks.

About adrenalin, a large number of different solutions have been used. I have used only pure novocaine with no other mixture.

REFERENCES

1. Zweifel, E.: Fatalities after sacral anaesthesia. Zentralbl. f. Gynak, 44, 140, 1920. Abstr. Jour. A. M. A., 74, 1138, 1920.

2. Scholl, A. J.: Sacral anaesthesia in urology. Jour. Urol., 6, 149, 1921.

3. Meeker, Wm. R.: Regional anaesthesia in surgery of the prostate gland and bladder. Journal-Lancet.

Meeker, Wm. R. and Bonar, B. E.: Regional anaesthesia in gynecology and obstetrics. Surg. Gyn. and Obst., 37, 816, 1923.

4. Harris, M. L.: Nerve blocking. Surg., Gyn. and Obst., 20, 193, 1915.

5. Lewis, Bransford and Bartels, Leo.: Caudal anaesthesia in genito-urinary surgery. Surg. Gyn. and Obst., 22, 262, 1916.

6. Crowell, A. J. and Thompson, R.: Sacral anaesthesia in perineal prostatectomy. Jour. Urol., 8, 81, 1922.

7. Hunt, V. E.: Surgery of the prostate. Minn. Med., 1921, 4, 544.

8. Judd, E. S. and Meeker, Wm. R.: The value of sacral nerve block anaesthesia in surgery of the prostate gland and bladder. Jour. Urol., 1924, 9, 395.

ALL IN GOOD TIME

Tommy, after going to bed, became thirsty, or thought he did. He called out: "Ma, I want a drink." The mother's voice answered back: "Tommy, you go to sleep." Tommy grunted, turned over and was silent for ten minutes; then again: "Ma, I want a drink." "Tommy, you go to sleep," was the reply. Intense silence again for ten minutes, then: "Ma, I want a drink." "Tommy, if you don't go to sleep, I'll come up and spank you." More silence, this time for about two minutes, then: "Ma, when you come up to spank me, bring me a drink, won't you?"—Clipping.

RADICAL TREATMENT OF FISTULA

Charles J. Drueck, M. D., Chicago.
Professor of Rectal Diseases Post Graduate Hospital and Medical School.

The radical removal of fistula embraces all of those operative procedures indicated for relief of the different types of sinuses. As a rule, it is desirable to operate promptly in all cases unless there is some contra-indication. It is not well to operate upon an acutely inflamed fistula because the peri-rectal areolar tissue is very liable to break down. In systemic complications, such as cancer, Bright's disease, liver and heart trouble an operation may be absolutely contra-indicated. The perplexing question comes with tuberculous subjects.

Two cardinal principles should underline the treatment of fistula in ano, first separation of the fistulous tract or tracts from the communications of the bowel and secondly the adequate closure of that communication with the removal of all the diseased tissues in the rectum. These measures having been employed, there is no occasion for an extended and complicated dissection, and removal of all of the ramifications of the fistula, for with adequate drainage externally upon the skin, they will tend to heal. The secretions of the fistula find their way to the external and internal orifices with comparative ease, and only rarely does any marked retention of secretion occur, and when it does occur it usually indicates an acute exacerbation of the infectious process.

In those cases suffering with extended infection and necrosis the destruction of a part of the sphincter may occur, thus weakening the future functioning of that muscle. In such a case, no matter how skillfully injury to the sphincter may be avoided, more or less incontinence may follow, and the patient may later attribute this condition to the operation. Also extensive perirectal inflammation may subsequently, after a fistula is cured, cause more or less cicatrical contraction about the anus and lower rectum, with some degree of stnosis of stricture. This condition, too, is not always to be attributed to the operative technic.

The radical operations are incisions and excision. Each has its class to which it is best suited, but neither method is applicable in all cases. Certain stereotyped methods are described in dealing with fistula but it must be impressed that radical cure often requires desperate surgery, and sometimes much originality and genius on the part of the operator. No one knows the pathology of a fistula until it is laid before him.

The advantages of a radical operation are:

1. Every sinus may be hunted out.
2. Overlapping edges may be removed.
3. Drainage is obtained and sepsis prevented.
4. The operation is quickly and thoroughly done.

The general rules for the operation as given by Goodsall & Miles (2) are to be observed is operating upon all varieties of fistulae.

1. Subcutaneous burrowing should be laid open at least a quater to half an inch beyond its extreme limit, so that complete exposure of the sinus may be secured.
2. Cautious manipulation of the probe is important lest we make passage where one does not already exist.
3. The sphincter muscles must be carefully spared as much damage as possible.
4. Should there be difficulty in locating the internal opening, all the external lateral burrowings should be operated upon before the main track is dealt with. The whole main track should be laid open unless by so doing the internal sphincter would be divided. Laying open only part of the main track while leaving the internal opening untouched is always followed by much delay in the healing process, and very often by failure of cure.
5. After laying open the sinuses, all angles of overhanging skin, especially if discolored should be removed with scissors.

TECHNIC OF OPERATION FOR COMPLETE FISTULA.

Preparation of the patient:—In every case the most careful surgical preparation and technic are necessary. Every detail must be observed as in a major operation. The best results will be obtained if the patient is given preparatory treatment for a few days prior to the operation. The sinuses should be cleansed with peroxide of hydrogen followed with silver nitrate solution, until the purulent discharge has almost ceased. By this treatment the cavity will contract considerably. Intestinal antiseptics, such as sulpho-carbolates, salol or bismuth subgallate, may be given to lessen later intestinal disturbances and septic intoxication. The diet should be non-nitrogenous for two days prior to the operation. The bowels should be thoroughly emptied two days previous to the operation, but too great catharsis must not be provoked, as a diarrhea proves a great disadvantage to the operator. The night before the operation a high enema is given to wash out the colon and rectum. The hair about the parts is shaved off and the whole perineum and buttocks are thoroughly scrubbed. These details are just as important as if primary union were always expected. While we have an infected field and a pus cavity to begin with, we are also making fresh wounds, which should be as nearly aseptic as possible.

Fistulae are best treated under a general anesthesia, because it frequently happens that upon laying open what appears to be a simple fistulous tract ramification and extensions may be found which necessitate more dissection than is possible to accomplish satisfactorily under local anesthesia.

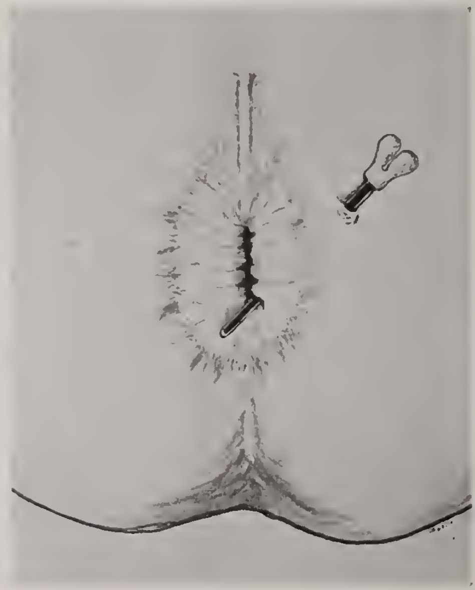


FIG. 1. A grooved director passde through the fistula divides the sphincter diagonally.

At the time of operation the patient is anesthetized, placed in the exaggerated lithotomy position, being careful that the knees are not drawn up so far as to make the skin tense about the anus, the outside parts are given a final scrubbing with soap, bichloride of mercury and then alcohol. The fistula is also washed out and injected with a 10 per cent solution of methylene blue which deeply stains the tissues with which it comes in contact and thus facilitates following any diverticuli. The sphincters are next thoroughly dilated.

The rectum may now be inspected and a final antiseptic irrigation given to remove all liquid and fecal material. At this time any ulcer or internal fistulous opening may be seen. A good sized sponge on a thread is introduced into the rectum above the operative field to prevent the descent of intestinal contents during the operation.

An abundant supply of saline solution should be on hand for irrigating purposes during the operation.

Incision:—The simplest operation is to lay the entire tract open by incision, thus dividing the sphincter muscle if necessary. Pott, who first advised this operation, suggested it as a means of overcoming spasm of the sphincter which keeps the parts in motion, and by constriction of the rectal lumen, prevents free exit of the discharges. In the complete fistula all of the structures between the sinuses and the rectum are divided.

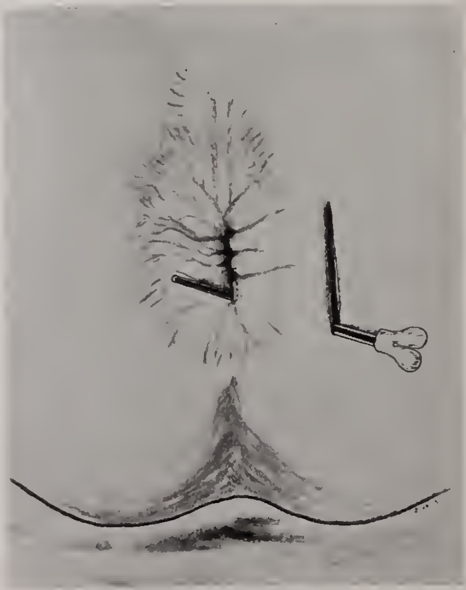


FIG. 2. The skin opening has been enlarged so that the director passes at right angles through the sphincter.

TECHNIC

The surgeon's left index finger is introduced into the rectum in order to feel the location of the internal opening, the course taken by the sinus, and any lateral burrowings as noted by the cord-like induration of the perianal and perirectal tissues are bidigitally palpated. Then pass a grooved director thru the sinuses into the rectum. Sometimes the external orifice is so contracted that difficulty is experienced in inserting even a small probe and it will facilitate the examination to enlarge the opening by making a small incision across it. Where several external openings exist the one considered to be the primary one should be selected.

Very frequently the director passes easily along the sinus until it impinges against the mucous membrane of the bowel where it is readily felt by the examiner's index finger, previously inserted into the bowel. The internal opening is now searched for diligently and when found, the director is passed thru it.

No force should be used during this maneuver least a false passage be made. The director can usually be brought out at the anus and supported by the index finger of the left hand. A heavy sharp pointed bistoury, or a live cautery, according to the needs of the individual case (this will be considered further under Tuberculous Fistula) is passed along the groove of the director and the bridge of tissue divided, thus exposing the whole tract. The sphincter if incised must be cut squarely across, as incontinence is then less likely to follow, than when the fibers are cut diagonally. (Fig. 1 and 2) The edges are now held apart and a careful examination made for diverticuli, which, if found must be treated as was the main sinus. Any connective tissue bands extending across the cavity should be broken down. The granulation tissue filling the sinus must be curretted away. If the director cannot be passed directly thru the sinus and then be brought out at the anus when introduced thru the fistula, it is better to dissect down upon it instead of using excessive force, as there is danger of breaking the instrument, which is a very annoying accident. Scissors are often preferable to the knife in such a case. If the internal opening is high up, and also in the internal complete fistulae, it is well to treat with injections for a few weeks when if improvement is not satisfactory the rectum must be divided in the posterior raphe even to the tip of the coccyx, if need be.

The internal opening should be carefully examined. The mucous membrane about this spot will often be found undermined or a submucous branch may be discovered.

The original internal opening is almost always situated between the two sphincters but occasionally there is another opening higher up, which may be above the internal sphincter. To carry the incision up to this second opening is a serious matter as it necessarily divides both sphincters and a part of the levator ani muscle, thus causing incontinence which may be permanent. So long a wound is difficult to heal and results in constriction of the bowel at this level thus further contributing to fecal incontinence. These high lying sinuses and internal openings are best treated by sutures and the careful and systematic packing of whatever cavity or track lead up above the sphincter, as described elsewhere. This treatment is more protracted and may extend over several months, but the ultimate result is much better. All undermined or devitalized tissue must be trimmed away, also any prolapsing piece of mucous membrane or skin which may be drawn into the wound must be removed, otherwise healing will be considerably retarded.

If the fistulous sinus passes thru or beneath the sphincter thus necessitating the division of that muscle during the operation it is most essential that the incision be so placed as to divide the sphincter at right angle (Fig. 1 and 2), so as to prevent irregular contraction and unsatisfactory healing as a result. The division of the external sphincter always deserves serious consideration because of the possibility of fecal incontinence resulting and thus leaving the patient in a worse condition than before. It is often desirable to carry out this operation in several steps not more than one-third of the sinuses being exposed at a time and this portion then allowed to unite firmly before cutting the next part. In this manner the muscle ends are more nearly approximated and the function of the sphincter will not be disturbed. It is sometimes profitable to dissect out the fistula to a point outside of the sphincter muscle and directly below the internal opening and then invert and suture the upper portion of the sinus.

During the operation careful watch should be maintained for any "show" of bismuth exuding from small off-shoots and side tracts. Often these tracts lead to cavities of considerable size which spell failure to the operation if undiscovered. The epitheal and cicatrical lining of the tracts, and any areas suspected of small, even hair-like sinuses, must be exercised. The areas laid open are often extensive and formidable but no chance whatever should be taken. If the surgeon is not most thorough, radical and painstaking, the operation might better not have been done, since recurrence is almost inevitable.

At the close of the operation, tags, and free ends of skin are cut away, and the open surfaces and cavities packed with gauze moistened in Dakin's solution; packed to control hemorrhage, which at times is annoying but which has never been found alarming. A perineal binder is tightly applied and the patient sent to his bed; the attending nurse inspects, and if necessary, changes the outer dressings every hour for three or four hours. The patient is then allowed to thoroughly react, and at the end of twenty-four hours, all gauze packing is removed; a hot sitz bath given and the parts irrigated with Dakin's solution, every three hours—day and night. It is permissible to adhere to the strict Carol-Dakin technic if it can be applied. A hot sitz bath precedes a change of dressings night and morning.

After Treatment:—The after treatment is just as important as the operation itself and the operator must watch each case himself and see that the wound heals properly.

With careful technic multiple fistulae can be successfully operated, tho the results of the operation are often spoiled by inexpert and careless treatment. Bridging over the tracts during granulation is a great source of danger, the smallest healed in pocket means recurrence. The patient must be examined daily during the course of convalescence to avoid bridging.

Too frequent dressing may indefiinitely interfere with healing, also packing it too tightly, in which case the surface will assume a membraneous appearance instead of healthy granulations. Too energetic application of antiseptics also retards healing. Very often I use no dressing at all after the first day, but instead each day the finger well coated with vaseline, is passed into the rectum avoiding the wound, whilst the patient is urged to strain out as tho at stool. I separate the edges with my finger or a probe to the full depth of the wound to insure healing from the bottom and not allow lapping together of the skin edges, which is very likely to occur in the skin near the anus. Also, each day, the patient is given an antiseptic sitz bath, or the wound thoroughly irrigated.

Wallis (1) emphasized that after a certain number of days the wound gets tired, so to speak, of any particular lotion or dressing, and does not respond to it as when it was first applied. Therefore, changes are made of several different applications.

Pain is not severe enough to need opiates, and as they effect the stomach, the patient is better off without them. The diet should be nourishing, soft and of such kind as to leave little residue, but it must not be scanty, as these patients all are anemic and need prompt building up. With this diet the bowels have no tendency to move for several days and need not be tied up. The bowels should be moved on the fourth day by giving a cathartic, followed by a copious anema just before the bowels move. From this time on the bowels should be moved daily with compound licorice powder to insure a soft, non-irritating defection. After each evacuation the anus and wound is thoroly cleansed with a warm ablution and the wound swabbed with balsam of Peru or ten per cent ichthyol to stimulate cicatrization.

In the deep extensive wounds with broad uncovered areas, Martin (2) has found it desirable to place flaps of skin into the depths of the wound where they become adherent skin grafts, thus greatly hastening recovery, since in the older technic the deep parts must fill by granulation first, necessitating a much longer time to heal.

Technic:—At the end of a week following the operation, infection will have become so inactive that graft can be made. Along the edge of a wound to be treated a strip of skin is marked off by two parallel incisions made with a knife. A narrow margin of skin is left between the proposed flap and the wound. The width and length of the flap is determined by the shape and size of the granulating surface on which it is to be used. The flap is under cut as near the true skin, and as free of fat as possible. Its attachment at one end is severed and the flap is turned down onto the granulating surface. The flap necessarily crosses a section of the narrow margin of skin left intact along the granulating wound, this section is cut out, thus allowing the plastic flap to contract with uncovered tissue in its entirety. This flap can usually be kept in place by a careful pressure dressing for forty-eight hours, which is sufficient for attachment. Bismuth paste is applied at this time with a pressure dressing.

The length of time the patient is confined to his bed depends altogether on the individual case. Ordinarily, he should be kept quiet for about one week until granulation is well established and then allowed to move about for exercise, but advised not to sit down, as pressure on the parts crowds the wound edges together, thus favoring adhesive bands, and also produces congestion of the whole field. Fistula patients should be kept to their bed no longer than is absolutely necessary, and, while not allowed to move about much, they should be urged into the fresh air and sunshine, for everything must be done to build up the system.

In every fistula operation the internal opening must be sought. Thru this aperture the director enters the bowel. Nothing is more unscientific than to force an opening at some other part of the sinus that happens to be near the rectum, and then cut the whole length of the superimposed tissue. Frequently the internal opening is the source of the trouble, which, if left untreated, will prolong the infection indefinitely. The undiscovered internal opening is a common cause of failure of a cure. There are many fistula of the external incomplete variety which do not communicate with the rectum and another group where the internal opening is below the external sphincter. Both of these types will heal kindly after the sinus and its branches have been opened and curetted and this may be done without entering the rectum.

Sharp curves in the course of the sinus may make it impossible to pass the probe entirely thru it. If the probe passes but a short distance, that portion should be divided and as the curve is reached the work can procede in that direction. Beginning at the external opening the grooved director is inserted to the proper depth and a portion of the overlying tissue cut thru. In this manner the tract is followed regardless of its deviations, until its internal end is reached. If there is an internal opening, the tract will lead the operator to it. If there is none, the dissection is made as far as the sinus leads.

If the internal opening is above the internal sphincter, it is well to excise that part of the sinus above the internal sphincter and close that part of the wound with catgut sutures, but leave the lower part below the internal sphincter open for drainage. By this procedure a greater degree of function of the sphincter is retained.

It is good surgery to remove the dense, indurated masses about the sinus, provided we are sure that they are not tuberculous, because such removal hastens healing. If, however, there is any likelihood of the sinus being tuberculous it should be treated with the Paquelin cautery (See "Tuberculous Fistula".

The operation by incision is quickly performed but has the disadvantage of leaving a large gaping wound which must heal by granulation, and the resulting scar endangers the sphincteric control. In old fistulae, where considerable suppuration exists or considerable hard cicatricial mass surrounds the sinus or several branches which more or less surround the rectum, this is the only approved technic.

Where the division of a high-lying track would involve the internal sphincter it is, as already mentioned, best not to lay this open into the bowel but to content oneself with enlarging it by an incision away from the rectum sufficient to give passage to the finger. The whole track should be curetted and packed with a long strip of gauze. From time to time during convalescence this sinus should be syringed out with a strong solution of Argent. Nit. gr. XX to the ounce, by means of a sinus syringe.

Any unrelieved branches or diverticuli will be clearly indicated during the after treatment by their refusal to heal in conformity with the rest of the wound but they will continue to discharge. Such a spot will ooze infective material and the opening will appear in the wound as a large skin pore, the edges of which are inflamed and puckered. A careful search with a probe will reveal the diverticula. Such a small sinus produces a discharge which tho small in quantity is kept up by irritation. These small branches may not be discovered at the time of operation, as the blood covered wound is a poor field to search with the probe. Any branches or pockets whenever found must be treated similarly to the main sinus.

INTERNAL INCOMPLETE AND COMPLETE FISTULAE. These fistulae are operable by incision but they deserve a special study.

In the blind internal fistula, in which the indurated abscess cavity is easily palpated outside, and with internal opening in the anal canal, it has been found sometimes desirable to first cut into the abscess cavity from without thus making a simple complete fistula to deal with; when the abscess cavity is more palpable inside the rectum, the free incision should be made at the site of the internal opening, laying the cavity fully open, and thus avoiding a complete fistula.

A speculum with a lateral opening is inserted into the anus to better expose the opening of the sinus. With a soft wire probe the direction and extent of the undermining may be determined. There will usually be found a pocket below the level of the opening into the bowel and this must be opened well down to the anus (the lowest point of the cavity). I prefer for this the blunt pointed hawk bill blade (Fig. 10). A hooked probe inserted into the fistulous opening drags down the sinus until the point of the probe is seen to bulge the mucosa at the lowest point of the pocket.

The superior hemorrhoidal artery descends on the posterior wall of the rectum to within four inches of the external spincter (a full finger length), and then divides into two branches which pass around the sides of the gut and break up into numerous small arterioles. If it is necessary to invade the bowel to this level the incision should be made with the thermo cautery. The cavity should be lightly curetted and packed with sterile gauze, one end of the strip being carried outside of the anus. At the end of twenty-four hours the gauze is removed and the wound irrigated. No further packing is necessary but the wound should be cleansed each day and wiped with 50 per cent ichythol in castor oil. Beginning on the third day the patient is given a daily injection of liquid petrolatum to insure soft evacuations.

REFERENCES:

1. Wallis, Fred C., Surgery of the Rectum.
2. Martin, E. C., Multiple Fistulae, Journal, Michigan State Medical Society.

GASTRIC AND DUODENAL ULCER—SYMPTOMS AND TREATMENT*

A. C. Stokes, M. D., F. A. C. S., Omaha.

No subject in medicine has a larger and I fear more valueless literature than gastric and duodenal ulcer. I desire to impress the point that all the writing and talking is about chronic ulcer within two or three inches proximally or distally to the pylorus, sometimes called peptic ulcer. Acute ulcers of the mucous membrane of the intestine are fairly frequent, easily produced and heal readily and leave no pathology. These ulcers do not interest us. The ulcer which interests us is the chronic ulcer. No doubt healing up at times again breaking down and going through periods of quiescence and periods of activity, but always sooner or later breaking down again, no doubt again healing spontaneously. At each new active period, induration is extended, the ulcer pierces a little deeper and sooner or later if left alone reaches the peritoneum and produces pain, perigastric adhesions, perforations, either partial or complete. The symptoms of chronic gastric and duodenal ulcer are definite and referred directly to the stomach and duodenum. I think it is useless on clinical grounds to attempt the differential diagnosis between gastric and duodenal ulcer. The refinements of laboratory tests may attempt this procedure. If we can carry one thought home to this audience it would be the thought that gastric and duodenal ulcer have a definite symptomatology and have definite signs and unless these signs and symptoms are clouded by perigastric adhesions, peritoneal infiltration, pyloric obstruction, etc., they are always definite. In other words, the uncomplicated gastric or duodenal ulcer has as definite a symptomatology as typhoid fever, or pneumonia. In order, however, to arrive at this definite symptomatology one must understand that the greatest number of cases with symptoms referred to the stomach are not gastric ulcer. No one ever proves any hypothesis by negative assertions, but sometimes one may clarify the atmosphere in this manner and I, therefore, desire to cite in this connection a few negatives.

First: Gastric or duodenal ulcer is not the pain of cardio-spasm due to some tracheal irritation or some extraneous disease affecting the terminal fibers of the pneumogastric nerve along its course. Such a condition has an entirely different symptomatology and should not be confused with gastric or duodenal ulcer. The same sentence will apply to stomach symptoms secondary upon peritonitis in distal parts of the abdomen; to peritoneal irritations; to adhesions pulling on the mesentery or omentum; to gall bladder disease giving evidence of trouble, especially when the stomach is full or when peristalsis is most active; or the vomiting of chronic infections, or to gastric crises of neurological origin, or to displacements of the liver, uterus, or transverse colon, to kidney pressure, tumors of the brain, and numerous other diseases, which have symptoms referable to the stomach. These symptoms are referable to the stomach because the stomach is the port of entry of nutrition and all disease of every kind is bound up inseparably with nutrition. These symptoms are all referred symptoms. In other words, the great majority of symptoms referred to the stomach are not gastric ulcer at all nor do they have the symptoms of gastric or duodenal ulcer. I mention these points in order to impress the definiteness of the symptomatology of gastric and duodenal ulcer, as we have learned to recognize them at the operating table and in the examining room.

---

*Read before the Joint Meeting of the Elkhorn Valley and Fourth Councilor District Medical Societies, Madison, Nebr., October 7th, 1924.

Let us refer now strictly to gastric ulcer. The signs and symptoms of gastric ulcer are: pain, tenderness in the epigastrium, vomiting and hemorrhage. Of these four symptoms, pain is most constant, most annoying and the symptom for which the patient usually seeks the advice of the physician. This pain is as characteristic as the colors of the rainbow. It is punctual, periodical, rhythmical and cyclic. A careful study of the daily routine of a patient with gastric ulcer will give the following cycle; food, comfort, pain, comfort, and food again followed by same sequence. In duodenal ulcer the sequence is food, comfort, pain, food, comfort, pain. A quadruple rhythm in gastric ulcer with a triple rhythm in duodenal ulcer. The period of comfort in our cases in gastric ulcer is about 1½ to 3 hours, depending on diet. The punctuality of appearance is so exact with the same meals that Mr. Moynihan says patients say they can set their watches by appearance of pain after eating the same meal taken at the same time of the day. Do we always require this periodicity to the pain before making a diagnosis of gastric ulcer? I do not think we do, and yet we should, and if we did many of our troubles would cease so far as the diagnosis of gastric and duodenal ulcer is concerned. I think we have all seen cases of tabes in which a diagnosis of gastric ulcer was made, yet they did not complain of having the periodicity or rhythm to the pain. Pain is the most important sign and this pain bears a definite relation to food taken into stomach.

Hemorrhage from the stomach is, I believe, given too much stress nowadays. It is not an uncommon thing for a patient to say, "I know I have a gastric ulcer because I vomited or spat blood." One sometimes forgets that cirrhosis of the liver, splenic anemia, acute ulcer, acute gastritis, acute poisoning, syphilis of the stomach, cancer, and polypi and other conditions are often accompanied by hemorrhage from the walls of the stomach. We think that unless there is a considerable gush of blood there is doubt as to the presence of gastric ulcer.

I am confining this paper to the clinical side of gastric ulcer, so cannot go into detail in the ancillary methods of diagnosis, such as x-ray, and laboratory findings. X-ray in proper hands is the most valuable handmaiden we have. But how many sins are being committed in the name of the x-ray of the stomach?

Laboratory examination of stomach contents with regard to hyperacidity is of very limited application and not at all to be relied upon. If you do not happen to agree with this statement, I would ask you to refer to Mr. Moynihan's examination of the acidity of 39 cases of gastric ulcer, 71 cases of duodenal ulcer—compare these findings with the results of examination of acidity of the stomach of 23 cases of chronic intra-abdominal infection. You will find the difference in the results is very small. Hyperacidity has been played too strongly.

The presence of tenderness in the epigastric region in gastric, and along the costal margin in duodenal ulcer, is an important fact to remember. This tenderness is frequently accompanied by rigidity—when this is present, one may expect some peritoneal involvement. I have never been able to locate this point of tenderness as definitely as to say that it is at Morris's or Murphy's point or at any other point, but a definite rigidity with definite tenderness with definite pressure by a lone thumb is very suspicious of peptic ulcer, if this tenderness be found anywhere within the triangle bounded by a line extending from the ensiform cartilage to the umbilicus on the left side and by a second line extending from the umbilicus to the end of the 9th rib and a third line from the 9th rib to the ensiform cartilage. This, of course, is also the area of gall bladder tenderness and differentiation must depend on other symptoms.

TREATMENT OF GASTRIC AND DUODENAL ULCER

We think the treatment of gastric ulcer has three divisions, namely: Chronic peptic ulcer is first a medical case, then a surgical case and then a medical case again. The only demand that I should make in respect to this treatment is that we are sure we are treating a peptic ulcer with medical treatment before we lay claim to curing any peptic ulcers. In all the talk that there has been by Lenhartz, Sippy, Smithies and others, I have personally not yet seen a chronic gastric or duodenal ulcer which has been absolutely and permanently cured by medical treatment. I am thoroughly familiar with the claims of Schmitt and Sippy and numerous others upon this point. However that may be, we will pass from the medical treatment of ulcers to the surgical. We are all agreed that perforating gastric ulcers, gastric adhesions, gastric ulcers with pyloric stenosis, are surgical cases from the time the diagnosis has been made, so that we may discard these complications and come to the treatment of first, duodenal ulcer, by surgical procedure: I think this question has been fairly well settled and although there have been various and sundry methods of treatment devised such as, excision of the ulcer, anastomosis of the stomach to the duodenum after the Finney method, or some other method akin to this with or without the excision of the ulcer, I believe the paper of Balfour last year at the American Medical Association about closed the argument; and I think we can say with certainty that gastroenterostomy when properly done is a simple operative cure for duodenal ulcer By being properly done, we mean a no-loop gastroenterostomy with the opening about three inches in length made at the most dependent portion of the stomach and an anastomosis made entirely with catgut—no linen or any form of non-absorbent sutures should be used. With a properly done gastroenterostomy we feel that duodenal ulcer is cured in a per cent of about 95.

Treatment of gastric ulcer cannot be so dogmatically disposed of because as yet the only treatment which is recognized by the best surgeon is sleeve resection, and this is an operation which with most surgeons carries too high a mortality to be made popular. Gastroenterostomy does not do for gastric ulcer what it does for duodenal ulcer. It is not our intention here to go into the reason for this, but merely to state this as a recognized clinical fact. Since most gastric ulcers occur on the lesser curvature their resection interferes with the blood supply and especially the nerve supply of the stomach to such an extent that peristalsis and the future happiness and comfort of the patient is not 100%. So while resection of the ulcer in itself is an easy thing, the results are not so good. The same criticism may be made of the Balfour cautery method, although this is much better because there is not so much of the lesser curvature of the stomach destroyed. Pyloric stenosis is usually not secondary upon gastric ulcer, but is a result of duodenal ulcer. Many of these ulcers spoken of as gastric or duodenal are in reality both, i. e., passing over the pyloric muscle and forming ulcerations on both sides of the pylorus. And lastly, gastric ulcer, if it is present, is a disease which requires all the ingenuity of both the physician and surgeon working hand in hand to arrive at a proper treatment for the individual case, and it is necessary to obtain all the information possible about, not only the fact of the ulcer's existence but the character of the ulcer, before any form of treatment which may be decided upon has been instituted. I realize there is very much more to be said on this subject, but I have limited this paper to only those things which have interested me and with which I have come personally in contact. Gastric ulcer itself is a rare thing in my experience.

It has been my privilege in the last five years to see a great many cases of peptic ulcer through the United States Veterans' Bureau, a small per cent of which we have been privileged to operate, and in conjunction with Dr. Gerrie, these cases have been studied and reported upon. Our conclusions then may be as follows:

1. Gastric and duodenal ulcer have a definite symptomatology directly referable to the stomach. An indefinite symptomatology is not an ulcer.

2. Gastroenterostomy, when properly done, offers the best treatment for duodenal ulcer.

3. The only surgical treatment justifiable

at the present writing for definite gastric ulcer is sleeve resection of the stomach. If this cannot be done no surgery is justifiable.

4. The treatment of these cases should not be decided upon until they have been studied both by an internist and a surgeon.

ULCER—GASTRIC AND DUODENAL*

Wallace A. Gerrie, B. Sc., M. D., Omaha, Nebr.

In considering the etiology of ulcer, there are a few conditions which must be present for its development. In the first place, there must be injury and infection; and in the second place, there must be the digestive action of gastric juice and possibly the pancreatic ferments. The above factors are probably accepted, but the other etiological factors in ulcer are not yet clear. A few theories advanced in regard to etiology are worth considering. Certain intra-abdominal diseases, such as chronic appendicitis and chronic gall bladder disease, have a definite relationship to ulcer of the stomach (Moynihan)(1). Whether this relationship to ulcer is due to bacteria (Rosenow)(2), or to a local ischemia and subsequent erosion as a result of motor disturbance due to nervous irritation, (Held)(3), is a question at present. Spasm of the pyloris is seen frequently in conditions other than ulcer, but it is characteristically present in ulcer of the duodenum and frequently with ulcer of the pyloris (Conlin)(4). This condition may be a factor in the etiology also, for it is certainly a factor in the delay of healing. Another possible etiological factor is the loss of mucin in the mucus which acts as a protective covering for the epithelium of the stomach (Rost) (5).

The pathologic physiology in the production of the pain in gastric ulcer is interesting. Sippy believed the chronicity and symptoms of ulcer are essentially due to the corrosive action of the gastric juice. The work by Carlson(6), Hambarger(7), Ginsberg(7), Hardt(8) and Hurst(9), contend that the pain is due to abnormal peristalsis, pylorospasm and intra-gastric tension. If one accepts Carlson's(6) judgment that there is no disease known capable of inducing true gastric hyperacidity and that pathologic deviations in acid and pepsin concentrations are invariably in the direction of decrease, the claim of hyperacidity can at best represent only hypersecretion, which has in fact, been found to occur in some cases of demonstrable gastric ulcer. It has further been well established that in gastric and duodenal ulcer, there may be normal gastric acidity, so-called hyperacidity, or complete achylia (Bell)(10).

Bell has found four cases of proven ulcer and we have one in our clinic, which was proven at operation, in which there was complete absence of acid. Thus, the once classical symptom of ulcer, (11) seems to be passing. Gastric ulcer is more frequently associated with diminished acidity, than is duodenal. This is explained by hypermobility working against the pylorospasm, causing a reflex through the vagus and the result is hypersecretion (Carman)(6). Even with this, almost conclusive evidence against hyperacidity being the cause of the pain, there is room for a lot of work here for the physiologist and the biological chemist. The symptomatology has been taken up in another paper, so we will not cover it here, but confine ourselves to laboratory, x-ray and medical treatment.

In our routine examination of a gastric case, we have the laboratory do, at present, Rehfuss's fractional analysis, stools for occult blood (after the third day on a meat-free diet), urinalysis, Wassermann test and complete blood count. We do not give a motor test meal, but rely on the x-ray for this evidence.

We find that the gastric analysis only gives us a high curve in about fifteen per cent of the cases. In the majority of cases, the curve rises rapidly to the normal limits and then falls and keeps at all times within the normal limits. I feel that the Rehfuss analysis is not worth the time it takes and certainly is objectionable to the patient. Furthermore, small fractions are not representative of the stomach contents as a whole because the latter are not well mixed (Gorham)(2). Again, it must be remembered that secretory figures vary much in the same patient from day to day, due to factors such as general condition, mental and physical strains, mucus, re-examination, intubation, etc., (White)(13). It is not essential for our purpose to reduce a patient to a correct mathematical formula, for all we need to know is, is the acid high, low or absent. The presence of blood in a gastric specimen is suggestive, but we do not rely on this finding. We have a much better finding when on the third and fourth day of a meat-free diet, we get a fresh stool and examine it for occult blood. Blood in any amount in intestinal contents indicates damage to the mucosa somewhere, but it must be remembered it might come from some point above the diaphragm. It is somewhat surprising to note that we run about twelve per cent positive Wassermann test reactions.

---

*Read before the Elkorn Valley and Fourth Councilor District Medical Societies, Madison, Nebraska, October 7, 1924.

Gastroenterologists have looked and longed for a test which will give a positive diagnosis for ulcer. The x-ray offers the best single test we have, providing its findings are interpreted by a competent roentgenologist. It is an extremely valuable and important link in the chain of evidence, but one must remember that it is simply one of many methods and its findings must correlate with the clinical and other laboratory findings. While the roentgen examination may be looked upon as a method of precision, yet the percentage of errors is probably larger in gastrointestinal examination than in examination of other portions of the body. This is due to the fact that the stomach and intestines are subject to many variations and can be affected by many causes of either external or internal origin.(17) Important points to remember are: (1) that the gastrointestinal tract is not fixed in position; (2) that the normal for the individual under examination is not known; and (3) that the gastrointestinal tract is affected by mental condition, food, drugs, etc. Should the roentgen findings be completely at variance with the results obtained by all other methods of examination, it is wise under such circumstances not to lay too much stress upon the roentgen results. A roentgen examination should consist of fluoroscopy and a study of plates. In our clinic, plates are taken at fifteen minutes, thirty minutes, one hour, six hours, twenty-four hours and forty-eight hours, with a barium enema when necessary; in the presence of questionable findings, we repeat under belladonna. The fluoroscope gives us the mobility and the peristalsis; also, the various spasms, but the plates give us the true picture of the morphologic changes in the wall of the stomach.

Cole(14) has classified six types of gastric ulcer: (1) deeply penetrating; (2) burrowing; (3) large, shallow, florid; (4) small, round, or oval; (5) mucosal or submucosal; (6) healed with hour glass contraction, or with slight dimpling of the mucosa. This classification applies to the chronic, for the acute ulcer may elude radiographic demonstration. In the duodenum, the cap may be notched, irregular, or incomplete. The penetrating ulcer is simply a hole through the gastric wall, with the adjacent viscera sufficiently adherent to the peritoneal surface to prevent general peritonitis, or when a pouch is formed in the adjacent viscera. This is seen in the plate as a patch of bismuth isolated or branching out from the stomach, usually with a gas bubble at the top and remaining for considerable time and seen immobile under the fluoroscope. The burrowing ulcer is one which burrows between the mucus and serous coats of the stomach and the barium filled crater has the appearance of a long tongue. The large, shallow, florid ulcer is confused with ulcerating area in a large carcinoma. It appears as a crater, usually one to two centimeters in diameter. The infiltration around this ulcer inhibits the peristaltic waves so that the involved portion of the gastric wall has the same shape throughout and when the plates are matched over one another, the involved area corresponds absolutely. The small round or oval ulcer is small in diameter, compared with large, and only penetrates to serous covering, as compared to the penetrating. These appear as small diverticula of the barium shadow. They are constant in the plates and are connected with the rest of the meal. In the mucosal or submucosal ulcer, the crater is even smaller and shallower than in the small, round or oval ulcer. This ulcer is hard to show roentgenographically. This shows in the plate as a very slight diverticulum of the barium meal and can usually only be proven by matching each plate of a series, one over another. Healed ulcers are characterized by: (1) typical hour glass contraction, which is interpreted as a cicatrical contraction of connective tissue due to an active ulcer at some time rupturing certain layers of the muscular coat and causing the production of connective tissue; (2) the other type of healed ulcer appears as a dimple and under the fluoroscope, the peristalic wave becomes pressed out and very shallow in the area. Many ulcers leave a scar so that healed ulcer must be considered.

A diagnosis of ulcer should only be made after a careful review of all data. Study of the clinical history allows a confident diagnosis of duodenal ulcer, but a gastric ulcer is much less common and there should be hesitancy in diagnosing it. A diagnosis of gastric ulcer may be accepted if confirmed by a radiologist. I am reday to accept Moynihan's(1) dictum, that unless we see a gastric ulcer, we are never sure of its presence.

The treatment of ulcer is still a much disputed point.

Moynihan(1) thinks that about all medical treatment does is to relieve attacks and that about all ulcers, except the acute, are surgical.

Sippy(15) thinks that all ulcers, except pyloric stenosis, perforation and severe hemorrhage, are medical.

Mayo Clinic(18) believes all ulcers are surgical except: (1) cases with short histories of ulcer, who have not had the benefit of accurate medical management; (2) young persons whose social status is such that medical treatment is practicable; (3) old persons who are poor surgical risks; (4) patients with post-operative recurrences; (5) patients who wish to try medical treatment before surgical interference.

It seems that in view of the recent light put on ulcer physiology, it would seem that medical treatment of ulcer is due for a better place by surgeons.

The treatment employed in our clinic is the same as that outlined by Sippy. Patients are placed on hourly feedings of milk and cream, and one-half hour after each feeding, an alkaline powder is administered. Two powders are used: one containing bismuth subcarbonate, fifteen grains, and heavy calcined magnesia, eight grains; and the other calcium carbonate, fifteen grains, and sodium bicarbonate, ten grains. In the majority of cases this amount of alkali completely neutralizes the acidity. In some instances, however, five to fifteen grains of calcium carbonate, or sodium bicarbonate or both, are added to the regular powders in an attempt to neutralize completely the acid. As a rule, at the end of one week, additional food, such as cereals and custards, are given. At the end of four weeks, patients receive three small feedings in addition to their hourly milk and cream. The majority of patients leave the hospital at this time, unless complications have arisen.

If persistent retention is noted after one or two weeks of medical management, or if the patient is unable to tolerate the treatment and shows signs of marked toxemia and susceptibility to probable alkalosis, he should be promptly treated surgically. Patients whose acidity is easily controlled seem to respond very well to treatment while in the hospital. Either before or after treatment, all possible foci of infection are removed.

A certain group of patients to whom large quantities of alkali are given to control the acid develops toxic symptoms, (Hardt and Revers)(16). In spite of the administration of large quantities of alkali, the gastric acidity remains high and finally it is necessary to modify the diet and temporarily abandon the alkalis because of the resulting toxic manifestations, such as dizziness, distaste for milk, headache, giddiness, nausea, and vomiting.

During the treatment, frequent gastric analyses are made for the indiscriminate giving of alkalies cannot be regarded as rational when no acidity is present to be neutralized. Whether or not the hydrochloric is the offender in ulcer, it certainly has to be neutralized to give the stomach rest and get a result with above treatment.

In conclusion, I wish to say that improved diagnostic skill permits greater discrimination in therapy and the patient benefits from both. Finally, the treatment of this condition comes back to the treatment of all disease, remove the cause and rest the part.

428 Aquila Court Building.

BIBLIOGRAPHY

1. Moynihan, Berkley: British Med. Journ., Febr. 10, 1923, 3241, 221.
2. Rosenow: Journ. Inf. Diseases, 1918-1919, 333-384.
3. Held & Gross: Amer. Journ. Med. Sciences, 1922.
4. Conlin, F.: Some phases of the Ulcer Problem, Nebr. Med. Journ., Vol. IX, No. 8, Aug. 1924, 318-322.
5. Rost: Pathological Physiology, Blakeston, P. 68.
6. Carlson, A. J.: The Secretion of Gastric Juice in Health and Disease, Physiol. Rev. 3: Jan. 1, 1923.
7. Ginsberg, Tumpowsky and Hamberger: J. A. M. A., 1916, 68-990.
8. Hardt, Leo S.: Medical Management of Peptic Ulcer, Annals of Clin. Med., 1922, Vol. I, 53.
9. Hurst: Monograph Guys Hosp., London, 1911.
10. Bell, J. R.: Gastric Ulcer and Achlorhydria, Arch. Int. Med., 32:663, Nov. 15, 1923.
11. Handbook of Therapy, Am. Med. Ass'n, Chicago, 1920, P. 293.
12. Gorham, F. D.: Variations of Acid Concentration in different Portions of Gastric Chyme, Arch. Int. Med. 27:434, April 1921.

13. White, F. W.: The Modern Examination of a Patient with Chronic Indigestion; 83: 571-576, Aug. 23, 1924.

14. Cole, I. G.: J. A. M. A., 81-261-269, July 28, 1923.

15. Sippy, B. W.: Relative Value of Medical and Surgical treatment of Gastric and Duodenal Ulcers, J. A. M. A., July 1, 1922: 1321-1323.

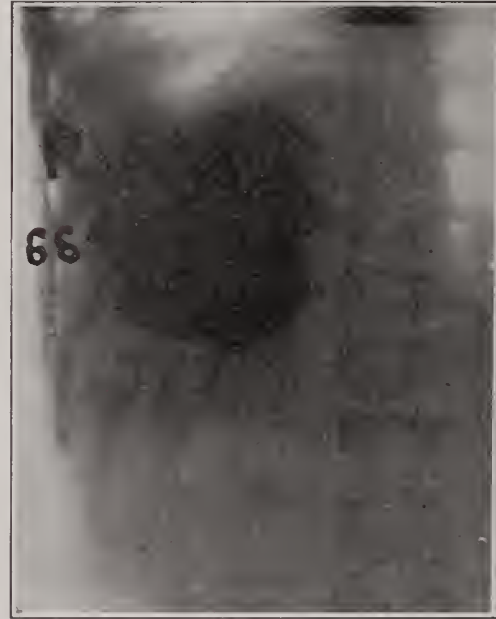
16. Hardt, T. J. & Rivers, A. B.: Toxic Manifestations Following Alkaline Treatment of Peptic Ulcer: Arch. Int. Med., 31: 171, Febr. 1923.

17. Jones, Allen A.: Tice Practice of Medicine,

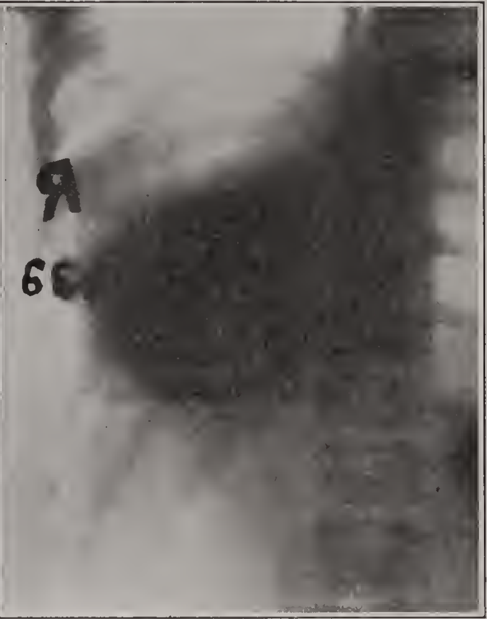
TRANSPOSITION OF STOMACH, WITH REPORT OF A CASE

John Buis, M. D., Pender, Nebr.

C. H. Male, age 15. Parents living and well. Father physician. Birth-weight nine and one-fourth pounds. Breast fed first ten days. Vomited after nursing from first day of feeding. Projectile in character. Tenth day put on artificial feeding on account of disappearance of mother's milk. Vomiting not modified in any way and at age of six weeks weight was four pounds. Wet nurse secured for two weeks and vomiting not quite so severe but no gain in weight. At this time put on Eagle brand milk and this gave least stomach disturbance. During first year had two attacks of bronchopneumonia. At end of first year weight was twelve pounds. Was one and one-half years before solid food was given without vomiting. Passed successfully through an attack of whooping cough at this time.



First Plate



Sixth Hour Plate

During third and fourth year would vomit after taking a drink of water if taken too rapidly. Food would also be regurgitated if taken too fast. Appetite would not be interfered with and he would continue his meal after vomiting. Bowels were always sluggish and laxatives were frequently needed to secure evacuations.

At age five and one-half years an exploratory operation was done with a possibility that a partial stenosis of the pylorus existed. No thickening was found. A long adherent appendix was removed The operation did not modify his symptoms in any degree for better or worse. Weight at this time was thirty-one pounds. During all this time it was found that he could always rest better when in a semi-recumbent position. The last few years sits up in bed with head resting on knees when stomach distress is present. Always makes a peculiar gurgling noise as if ruminating. At times expels a very foul gas from mouth with great deal of force. Distress is always relieved by vomiting which is practically daily. Has frequently vomited food eaten twenty-four hours previously. At one time vomited nuts that had been eaten six days before. Always feels hungry but is afraid to eat. Various diets have have been tried without relief.

Examination—Is rather frail, under-developed and under-nourished lad. Is fifteen pounds underweight for boy of his age and height. No discharge from nose, or ears. Tonsils of buried type. Teeth in good condition. Vision in both eyes normal.

Chest—Apex impluse in fifth interspace inside of nipple line. Lungs, no rales or areas of modified breathing.

Abdomen—Old operation scar. Small epigastric hernia in mid-line midway between navel and xiphoid. Right oblique inguinal hernia. Liver felt along right costal margin. Spleen not palpable. No tumor masses or areas of tenderness. Genitalia normal. Extremities normal.

Urine normal in quantity. No blood, casts, albumen, or sugar.

Blood—Hg. 80 (T scale) Red cells 4,900,000. Whites 10,000. Polynuclears 65%. Large lymphocytes 15%. Small lymphocytes 20.

Stomach Analysis: Material regurgitates on account of difficulty in passing tube. Average of three examinations made at intervals of three days. Trace of free HCl in one. Two—No HCl. Average total acidity of three examinations 32. Filtered contents did not digest white of egg boiled four minutes. Equal parts of tenth normal HCl and gastric contents digested white of egg. Adding U. S. P. pepsin did not increase digestive activity. X-ray examination made at three different times over period of six months gave identical findings at each examination.

Fluoroscopic—Barium could be seen entering upper part of oesophagus, when it would disappear and next be seen in right hypochondrium below liver. Duodenal cap not visible. Stomach not mobile and manipulated with difficulty. No niche, no incisura. Plate shows oesophagus passing to right at level of eighth dorsal vertebrae and stomach in right hypochondrium. Plates taken at half hour intervals show no variation in outline of stomach. Six hour plate shows half of residue in stomach. Twenty-four hour plate shows small residue in stomach and part of barium in descending colon. Colon in normal position. Clinically, considerable relief has been gained by giving dilute HCl after meals. Vomits only occasionally and has gained in weight. Feels very much better and acts more like a boy of his age.

REPORT OF A CASE OF ENLARGED THYMUS*

Hugh O'Donnell, M. D., Springview, Nebr.

Before going into a discussion of this case of enlarged thymus which caused sudden death, I would like to briefly consider some of the embryological and anatomical features of this interesting and little understood gland.

The thymus belongs in the category of internal secretory glands, and its functions during its rather brief career are still a good deal in the dark, for less is known of its purpose by far, than of any of the other structures classified as glands of internal secretion.

The thymus is present in the early embryo, where it is formed by tubular diverticuli which spring from the pharyngeal aspect of the third visceral cleft on either side. These diverticuli soon unite approximately in the mid-line and thus the thymus comes into being. Its histological character is distincly of the lymphoidal type. It rapidly increases in size until about the end of the second year of extrauterine life, when it begins to decrease in size, undergoing degenerative changes, and rapidly shrivels to a small aggregation of fatty and lymphoidal cells in the upper mediastinum.

At birth the gland weighs from seven to ten grams and at its greatest normal development it weighs about twenty-five to thirty grams. It is agreed by all writers on the subject that a persistance of the gland after the second year is abnormal. There are several pathological conditions of the thymus mentioned in the literature, but this discussion will be limited to enlarged thymus not associated with general lymphatosis or lymphatism.

This distinction is made because in cases of lymphatism, all lymphatic structures are involved, and consequently the thymus might be involved provided it were present at that time. In such cases, the thymic condition would be secondary to a general lymphatosis, while in the case shortly to be considered, the thymus plays the primary role.

When we consider enlarged thymus in relation to sudden death, there are two classes which come under this heading:—

First, sudden death in infants, which usually occurs during sleep, with or without physical signs or asphyxia.

Second, the group of adult cases where sudden death has occurred during anaesthesia, or while bathing.

In the first instance we are dealing with a problem in mechanics, which is created by the abnormal size and weight of the gland in relation to the contiguous structures, for instance, the pneumogastric nerve, the air passages and the great vessels. It is readily conceivable that a foreign body (an enlarged thymus may be considered as such) in the mediastinum, by pressure on the pneumogastric could cause sudden death, and likewise cause death by pressure on the great vessels or the air passages.

I will attempt to give no etiology for enlarged thymus, for the simple reason that I can find none in the literature, and have no explanation of my own to offer.

---

*Read at the Eighth Councilor District and Holt County Medical Society, Long Pine, May 7, 1924.

Following is the report of a case:

An infant, H. L. B., female, was born June 3, 1923. She was the second child of her mother, and was born during a normal, fairly easy labor. Personal history of mother and father was good in all respects. Birth weight was 11 pounds. This baby gained weight from the first; was breast fed and was allowed to nurse every time she cried. At the age of one month she weighed 15 pounds or a gain of 4 pounds in the first month.

I heard no more from this baby until the early morning of Aug. 3, 1923, when the father called and informed me that the baby had died suddenly an hour previously. He requested that I come out to see the baby. On questioning the parents, I found that the baby had always slept in the double bed between them, as they were afraid the child would not be warm enough if left to sleep alone. The baby was blue from head to foot when I saw her and showed all the usual signs of death by asphyxia. Percussion of the chest revealed dullness along both borders of the sternum, but this had to be discounted to some extent, since the child had been dead two hours.

Further questioning of the parents failed to bring to light any previous illness or apparent abnormality. However, they did admit that the baby had seemed "short of breath" as they expressed it, for about a week previous to her death. No cyanosis was noted by them at any time. The parents were very anxious to know the cause of death, as they feared that they might have smothered the baby while they were asleep. Being in this frame of mind, I had no difficulty in obtaining permission to perform an autopsy.

On opening the thorax, I found the greater part of the right chest to be filled with a large glandular mass (lighter in color than the lung) which had pushed the right lung into the extreme right upper thoracic cavity, and had also encroached upon the cardiac area to the left of the sternum. The remainder of the right lung was atalectatic and undoubtedly had not functioned for some time. The heart was rather small and of poor musculature, being pushed upward and to the left of its normal position.

There seemed to have been considerable pressure on the lower trachea and the aorta. There were two diverticula from this mass extending up into the neck apparently in the direction of the thyroid gland. I had no choice but to decide that I was dealing with an enormously enlarged thymus, and felt justified in proclaiming it to be the cause of death.

All other post mortem findings were without special interest, note being taken, however, that the spleen was normal in size, and that all other lymphoidal structures were normal in so far as I could determine without a histological examination. This later fact seems to prove that the case was one of primary enlarged thymus and not simply a phase of a general lymphatosis.

ABRAMS TECHNIQUE AN ILLUSION AND FRAUD.

The revolutionary Abrams technique for the diagnosis and treatment of disease which has swept the country is utterly without foundation in science.

Such is the verdict of the Scientific American Abrams Investigation Committee which for nearly a year has subjected the so-called electronic reactions of Abrams to a searching analysis. The practitioners of the Abrams method have declared it holds out a new hope for suffering humanity. Its enemies have dubbed it the greatest piece of charlatanism in history. The movement has spread to all parts of the world and threatened to upset the entire theory of the medical profession.

There have been 44 different variations of the Abrams apparatus in this country alone. The Abrams method has had 3,500 practitioners; the other methods have each had a thousand more. The number of patients of all them has run into hundreds of thousands.

"The so-called electronic reactions of Abrams do not exist—at least objectively," declares the committee. "They are merely products of the Abrams practitioners' minds. These so-called reactions are without diagnostic value. And the Abrams oscilloclast, intended to restore the proper electronic conditions in the diseased or ailing body, is barren of real therapeutic value. The entire Abrams electronic technique is not worthy of serious attention in any of its numerous variations. At best, it is all an illusion. At worst, it is a colossal fraud.

"This electronic development has caused a sad state of affairs in this world of ours. It has given rise to all sorts of occultism in medicine. It has been a renaissance of the black magic of medieval times. It has given free reign to idotic ideas—ideas which would formerly have been laughed out of existence at their very start. Suffering humanity has been made so many lavish promises of late that it is a sad disillusion now to go back to our conservative orthodox medicine, which, after all, remains our mainstay.

"When the day arrives for the practical application of such serious research work, we may be certain that it will have nothing in common with the passing electronic craze. In so far as concerns the apparatus employed, the methods of exploitation, or the qualifications of the men engaged in the work, it will be wholly without resemblance to the cults whose basic ideas and whose technique this Committee denounces."

Dr. Abrams died suddenly of pneumonia on January 13, in the midst of the Scientific American investigation. His death came on the eve of his scheduled appearance as the star witness in the trial of Dr. Mary Lecoque, an E. R. A. practitioner, at Jonesboro, Ark., charged with using the mails to defraud.—Journal Mo. State Med. Assn.

PHYSIOTHERAPY IN ORTHOPEDICS

Richard Kovacs, New York (Journal A. M. A., July 12, 1924), relates in a condensed form the physics and the mode of action of the various physical therapeutic measures as generally used now, and describes their application in orthopedic conditions in which they are indicated. The main indications for the local treatment by physical measures are the following: In traumatic conditions: the acceleration of the process of repair and of the restoration of function by the increase of local circulation; the promotion of absorption; the prevention of adhesions; the relief of pain; the relation of local muscle spasm; later, the restoration of mobility. In acute inflammatory conditions: the combating of the infectious process and the relief of pain. In chronic inflammatory conditions: the improvement of local circulation; the softening of adhesions; the removal of inflammatory products; the relief of pain; the increase of mobility. In sluggish or infected wounds, stronic ulcers: sterilization and mild stimulation. In paralysis: the promotion of local circulation; the improvement of nutrition and the maintenance of the contractility of the muscles; the maintenance of strengthening. In contractures and scar formation: the softening or dissolving of scar tissue; the increase of mobility. The physical therapy principles at our command to fulfil one or several of these indications are: radiant light and heat; superheated air; whirlpool baths; diathermy; massage; mechanical vibration; manipulation; active and passive exercises; static wave current; faradic current; galvanic (constant or direct) current; sinusoidal current; ionization, and ultraviolet rays. Physical therapy affords the means of benefiting a wide range of orthopedic, and especially traumatic, conditions. Modern physical therapeutics should utilize all physical agents that have been found to be effective and rational. Treatment should be administered or supervised by medical men specially trained in these methods. Physical therapeutics will be most effective when it is used in conjunction with recognized medicine, surgical and orthopedic measures. In the interest of securing the proper place for physical therapeutics in orthopedics, it is desirable that physical therapy methods should be employed and studied on a much wider scale than they are at present, and that the results of properly indicated and administered treatments should be recorded and published.

THE FORTHCOMING U. S. PHARMACOPEA

The committee elected in May, 1920, for the revision of the United States Pharmacopeia has practically completed its work. The responsibility for the scope of the new book was placed on the twenty-one physician members of the committee so that the new edition should be more fully representative of the therapeutically valuable drugs than formerly. The number of medicinal sub- 650. Among the additions are acetyltannic stances to be included in the book is less than acid, acetylsalicylic acid, barbital, phenobarbital albumin tannate, amidopyrin, strong silver protein, mild silver protein, arsphenamin, bromal, chloramin, chlorinated paraffin, dexcium iodobehenate, carbon tetrachlorid, car- ethylaminobenzoate, barium sulphate, cal trose, dichloramin, epinephrin, neoarsphenamin, chaulmoogra oil, phenolsulphonphthalein, procaine hydrochlorid, quinidine sulphate, quinine ethylcarbonate, sodium diphosphate, barbital sodium, whiskey, brandy, thyroxin. Most of these are products of recognized therapeutic or diagnostic usefulness. Many of the preparations are already described in Useful Drugs and a still larger number are included in New and Non-official Remedies. In many cases the descriptions and standards in New and Non-official Remedies have been adopted for the new Pharmacopeia. In the new book obligatory biological tests are given for the following drugs and their preparations: Aconite, cannabis, digitalis, epinephrin solution, ergot, pituitary solution, squill and strophanthus. With many of the useless or doubtfully valuable drugs eliminated and with the addition of a number of substances of demonstrated merit, the new Pharmacopeia will deserve greater support from the medical profession than has been the case with previous editions of the book.—(Journal A. M. A., Sept. 20, 1924, p. 923.)

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
Terminal Building, Lincoln, Nebraska.

F. A. Long, M. D., Editor....Madison, Neb.
R. B. Adams, M. D., Associate....Lincoln, Neb.
Ivy M. Campin, Acting Business Manager,
1012 Terminal Building, Lincoln, Neb. Tele. B2625.

COMMITTEE ON JOURNAL AND PUBLICATION.
F. A. Long, Chairman....Madison
W. O. Bridges....Omaha
B. F. Bailey....Lincoln
R. B. Adams, Ex officio....Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, not the carbon, submitted.

Reprints should be ordered from the printer, The Huse Publishing Co., Norfolk, Neb.

Entered at the Post Office at Norfolk, Nebraska, as escond class matter.

Vol. X January, 1925 No. 1

HAPPY NEW YEAR

CALL FOR PAPERS

Any doctor who wishes to read a paper before the Annual Meeting, please send name and title to the Association office, 1012 Terminal Bldg., Lincoln, Nebr. Do this as soon as possible. This is an especial appeal to the doctors out in the state.

ANNUAL DUES

The annual dues for membership in the Nebraska State Medical Association are now delinquent. Please send the amount, $5.00, with your local Society dues to your Secretary, as soon as possible, so that he can send in an early report.

R. B. Adams, Sec.-Treas.

THE SECRETARIES AND EDITORS CONFERENCE IN CHICAGO

Both as a duty and a privilege the secretary of the Nebraska State Medical Association and the editor of the Nebraska State Medical Journal attended the annual conference of secretaries of constituent state medical associations and of editors of state medical journals at the A. M. A. headquarters in Chicago, November 21st and 22nd. Numerous problems pertaining to organization, policy, procedure, programs, graduate extension work, medical journalism, etc., were discussed.

That a county with but a few physicians, as a unit of organization is not ideal, but a handicap to scientific work, as has been contended by this editor for many years, was well brought out. The full-time secretary and the work he can and does accomplish was told by the lay secretary from Wisconsin and executive secretary-editor of Pennsylvania. The relation of the state associations and the Workmen's Compensation Laws was thoroughly discussed and the deficiencies of the present laws pointed out. Periodic health examinations elicited much interest and the verdict was that the profession should take a greater interest in this work and do it systematically and thoroughly. The impression was given that graduate extension work might be undertaken by the A. M. A. in the near future.

The profession will be interested to know, as the editor was pleased to learn, that the policy of the principal state medical journals in regard to the publication of original articles from the state membership, reports of societies and the publication of news items is the same as the present management of the Nebraska State Medical Journal has pursued. The open forum editorial policy of this publication is unique in state medical journalism.

FUR DERMATITIS

Fur dermatitis is mentioned in the J. A. M. A., for Oct. 4, 1924. A personal experience a few years ago may prove of passing interest: A papular itching eruption appeared on the side of the face and neck and was at first attributed to close shaving. A new fur coat with a so-called "southern beaver" collar was being worn. Persistent medical treatment for some time availed nothing. A confrere suggested it might be due to the irritation of the fur collar. The collar was covered with cloth, after which the eruption promptly disappeared.

Palmer Findley.

The NEW PRESIDENT'S GREETING

PALMER FINDLEY was born in Lewis, Iowa, in 1868. He was graduated from the State University of Iowa, a bachelor of science, in 1890, and from the Northwestern Medical School in 1893. He was an interne in Cook county hospital from '93-95; did post-graduate work in Vienna and Berlin in 1900-1901; was assistant professor of gynecology and obstetrics in Rush Medical College from 1901 to 1908; professor of gynecology University of Nebraska College of Medicine from 1908 to 1919. He is a member of the American Gynecological Society, American Association of Obstetrics, American College of Surgeons. In 1913 he published "A Treatise on Diseases of Women."

—The Editor.

In these days of social and political unrest it is inevitable that the medical profession should be caught in the maelstrom. Problems old and new are engaging the attention of the medical profession as never before and to a degree that at times would seem to lead us far from the beaten path.

We would not discourage the legitimate effort of any individual or any group of individuals to further their own interests, but such efforts must conform to the common interests of the whole profession. Without such regard for the common welfare of the whole there can be nothing but hopeless contention and disorganization. Bad as this may be the consequences will extend beyond the bounds of organized medicine, it will be sensed by the lay public with the inevitable result that confidence will be impaired and cults will flourish.

With every advance in medical science and the ever increasing trend toward specialization our organization becomes more and more intricate, more delicately balanced, and hence more dependent upon mutual trust and confidence. To this end let us have moderation in advancing our views and tolerance for those who oppose them.

Your presiding officer for the coming year expresses the wish that his term of office will evolve some constructive service to the medical profession of the state.

Your obedient servant for the year nineteen hundred and twenty-five.

Palmer Findley.

IN APPRECIATION

I want to thank the members of the Nebraska State Medical Association for the help and encouragement given me during my term of office. I am especially grateful to those who have asked me to do something, either as individuals or in groups, for I have really considered myself a servant of the profession and have enjoyed the opportunity afforded me to serve. The office of President should not be considered in the light of personal aggrandizement or an occasion for carrying out individual ideas to the exclusion of the general opinion of the Association, but should be regarded as a means to render constructive service for the good of the many.

It is the duty of every member to call upon the President to render any help that he may give, as well as to give him your wholehearted support in the performance of his duties. If you do not make your wants known to him you cannot in justice criticize him for any act of omission. I am sure that your next President will merit your encouragement. and for the good of the organization I ask you to be as loyal to him as you have been to me. With sincere thanks and all good wishes for the New Year.

—Morris Nielsen

MEDICAL LIBRARY SERVICE FOR NEBRASKA PHYSICIANS

A communication from a rural practitioner suggested that the Association could do a great deal for the members by establishing and maintaining an up-to-date medical library.

Editorials in the June and September numbers of this Journal called attention to the medical library service offered to the profession of Nebraska by the Nebraska University College of Medicine Library at Omaha. The small library owned by the Association some years ago was donated to the College of Medicine as soon as the first unit of the college was built. Since the establishment of the Nebraska State Medical Journal accessions in exchange medical journals and books sent for review, have been donated regularly to the College of Medicine Library. The College Library consists of about thirty thousand volumes and is constantly growing. Over two hundred current medical periodicals are received at the library. The library is desperately cramped for room and the library force is inadequate. In spite of this the editor is informed it is the best medical library in the middle west, not excepting Kansas City, Iowa City, Minneapolis and Denver.

This library is available for the use of physicians of the state; books may be loaned and assistance will be rendered in the preparation of bibliographies. Those in charge of the library will be glad to do anything possible to make the library of more value to the physicians of the state.

The outstanding fact, then, is that the library is there, the service available; simply command the service.

The librarian is authority for the statement that so far an average of one hundred members of the State Medical Association have availed themselves of the service each year.

THE NEBRASKA STATE MEDICAL JOURNAL —AN APPRECIATION

The steady and rapid improvement in all departments of the Nebraska State Medical Journal has been observed with pride and pleasure. Several years ago many copies of the journal that came to my desk were barely scanned. A mere glance revealed a mediocre class of articles and the whole periodical was unattractive and incompetent.

There has been a decided change in the character of the articles, both with regard to the subject matter and the substance. There is greater accuracy in scientific reports, the literary style is improved, the argument is saner and the conclusions more rational. There is also a better style of presentation. In short the Nebraska State Medical Journal is now on an enviable plane of intellectual respectability, worthy of our best support and deserving of our pride.

There is notable improvement in the appearance of the journal and an increase in a desirable line of advertisements. The mechanical end of its production is in keeping with the high standard of the rest, furnishing a clear legible print on good substantial paper.

The causes underlying this improvement are worthy of thought. A perusal of the personnel of the authors shows that a larger number of the out-standing men in the state are interesting themselves in the Journal. We do not see repeated imperfect articles from the same author, but more finished products from many. It is refreshing to observe that many of the best of them come from scattered localities outside of the larger medical centers, proving what some of us have long suspected, that many of the most brilliant men of the profession are serving the isolated communities in a superior manner. Greater interest and confidence in the Journal has inspired the better men to turn to it for publication of their articles and the standard of its publications have thus been elevated.

Back of this inspiration must be some motivating factor. The editor of the Nebraska State Medical Journal, has worked zealously and effectively for the advancement of the periodical. His impartiality and sincerity has impressed itself on the medical fraternity in Nebraska, and to him more than any other, belongs the credit for the fine standing of our journal.

The medical profession in this state includes many men who are the equal in training and ability to any in the world. We have here an A-1 medical school. The Nebraska State Medical Journal should be the medium through which our professional attainments and progress are reflected. May we back up the editor in his efforts for the benefit of the profession and make our State Journal one of even greater merit.

—Clarence Emerson.

EDITORIAL PARAGRAPHS

There are seventeen murders in the United States to one in England.

Insulin is useless in all comas save those due to acidosis, and the physician must beware.

The seventy-sixth annual session of the American Medical Association will be held at Atlantic City, May 25-29, 1925.

From the number of malpractice suits filed during the past six months it seems evident that the laity has implicit confidence in the theory that all doctors have reserve funds that ought to be distributed pro bono publico.

New advertisers in the Journal are: The National Research Laboratory, The Frank S. Betz Co., The Chicago Postgraduate School and Hospital, The W. G. Cleveland Co., The Victor X-Ray Co., W. J. Whittaker. The ads help pay for your Journal. Read the ads!

The Journal can use more well worked up case reports. Such reports mean more to the men in general practice than any other material. They are appreciated by men working along special lines, as well.

The Omaha-Douglas County Medical Society's campaign of education by approved articles in the Sunday papers has made a very promising beginning and great good may be expected to result from a continuation of this method of presenting modern medicine to the public.

Before the Eastern Society of Anaesthetists, New York City, Oct. 22, Dr. James T. Gwathmey, announced a new "twilight sleep" formula involving the use of scopolamine, and morphine in a solution of magnesium sulphate.

According to census bureau figures given out recently, 14,412 deaths from automobile accidents occurred in the United States during 1923. During the same period 123 accidents due to autos occurred in Nebraska, a rate of 9.2 per one hundred thousand of the population.

POSTGRADUATE WORK IN VIENNA

Vienna, Austria, Nov. 15, 1924.

I will now fulfill my promise to write concerning the postgraduate work in Vienna. The postgraduate work for those from English speaking countries is in charge of the American Medical Association of Vienna. Courses are arranged, faculty members consulted and the members are assigned to courses wanted, by this association. The members are assigned to courses by seniority, that is, the older members have the first right to take a course. Pathology under the renowned Erdheim is a wonderfully developed course and in the estimation of all the members, it should be taken by everybody. He is a wonderful teacher and is as enthusiastic as a youngster. All branches of anatomy are well developed here and one can get anything that is wished for. Internal medicine, general and special, is developed to a high degree and the teachers of this branch are all internationally known. They are all well equipped to teach and their material is inexhaustible. All interesting cases are followed from the beginning to the autopsy. There are said to be 68,009 autopsies in Vienna in a year and it is easy to understand how diagnosis has been so well developed. As far as I can see, and by talking with other Americans, therapeutics is not on the same plane with diagnosis. I might say it seems to be neglected to a certain degree. Fluoroscopic work receives a great deal of attention and I am informed by the American roentgenologists here that they are far superior to the Americans in this line. They consider fluoroscopy an important part of diagnosis but do not put so much emphasis on the x-ray plates. Pediatrics is well taught and the material is plentiful. Medical gynecology is well developed and more emphasis is put on this than on the operative side. There are many eye, ear, nose and throat men here and they are all well satisfied with their work and feel that it could not be better. As to actual operation there is little of this in the postgraduate work here and I am informed by those more competent to judge that the surgical technique is not on the same high plane as that in America. Most of those who wish to operate go to Prague or Budapest. The cost of the work ranges from $3 to $20 an hour and the number taking a course depends upon the type of work done. I feel that for pathology, internal medicine, pediatrics, fluoroscopy, medical gynecology, diagnosis and eye, ear, nose and throat, Vienna is supreme in postgraduate work and believe that all here feel the same. Any information will be given by writing to Mrs. E. M. Kreidel (the secretary), care of American Medical Association of Vienna, 21 Spitalgaase. If any one in Nebraska wishes to write me I would be glad to give him any information I may be able to obtain.

Arthur L. Smith.
Care of American Medical Association,
21 Spitalgasse, Vienna, Austria.

THE GORGAS MEMORIAL

During the past year, throughout the United States, the work of organizing the Gorgas Memorial State Governing Committees has been progressing. In some states the response has been most enthusiastic, while in others considerable effort has been necessary to bring home to the doctors, the importance of this movement to them, individually and collectively. Inasmuch as the Gorgas Memorial is primarily a medical movement and as such must have the united support of the profession if it is to make the proper impression on the general public, we take this occasion to outline briefly the Gorgas plan and to request the cooperation of our colleagues in bringing to a successful issue, this national health program.

We are planning to establish a Memorial for our former chief, Major General William Crawford Gorgas, not of marble or bronze, but a permanent living organization in the form of a great health foundation typical of his work in research and curative medicine, that will unite lay men and doctors in an intelligent effort to obtain better personal health—a health guild that will be supported and directed by the representatives of curative medicine.

The Gorgas Memorial consists of two phases:

1. An Institute in Panama for research in tropical diseases.

2. A health educational program in the United States and other countries that wish to co-operate and participate in the movement.

We are living in an age when people are knocking at all doors of knowledge and demanding that they be admitted. In the field of medicine who are so well fitted to meet this demand as those actually engaged in the practice of medicine? The doctors have a far more interesting and important message to deliver than any other group.

In the United States today there is scarcely a community that has not its quota of irregular "medical practitioners", so called. In many states there are strong organizations of the representatives of the various cults, whose theories are imposed upon an uninformed public. Public ignorance is encouraged by professional reticence and the result is the astounding growth of unscientific methods. If the profession is to maintain the high standing to which centuries of labor in behalf of suffering mankind entitles it, it is essential that a definite organized effort be made to familiarize the public with such facts as will impress upon it the importance of medicine's contributions to human welfare. A constant fund of proper health information through the newspaper, magazines, lectures, moving pictures and the radio, furnished by medical men and women of known reputation and standing, will direct the public to the proper source for medical advice and gradually eliminate the irregular practices constantly increasing.

One of the objects of the Gorgas Memorial is to furnish a channel through which this kind of information may be disseminated. It cannot be done by individual physicians. It must be conducted by a dignified, ethical organization, controlled by the medical profession. The name of Gorgas is synonymous with "better health". No more appropriate name could be adopted for a movement that has for its object, the development of co-operation between the public and scientific medicine for the purpose of improving health conditions by implanting the idea in the mind of every individual that scientific medicine is the real authority in all health matters and as such should be recognized as the source of health instruction.

Before we ask the public for financial and moral support, it is essential that the doctors of the country unite in support of this program. As a means to this end, Governing Committees are now in process of organization, on the basis of 100 members to every 1,000,000 population in each state. 75% of the personnel of each Committee will consist of medical men and 25% of influential laymen and women. The permanent activities of the organization will be supervised by these Committees in their respective states, in co-operation with the National Executive Committees.

An organization cannot operate without funds. We are endeavoring to raise an Endowment of $5,000,000, the interest only of which will be utilized to carry on the work. The principal will be invested in trust securities and remain intact. None of the money thus obtained will be spent for buildings or equipment. The Republic of Panama has donated the site and guaranteed the initial buildings and equipment for the tropical research laboratories, in recognition of Gorgas' great work in Panama. Those invited to serve as Founder members of the State Governing Committees are requested, as they accept membership on the Committee to subscribe $100 to the Endowment Fund, payable within two years. Every individual on the State Committee is a contributing member. When the medical nucleus of the organization is complete, a general appeal for funds will be made to the public.

THE SOCIETIES

On the evening of November 22d, the members of the Lancaster County Medical Society were the guests of Dr. Benjamin F. Bailey at the University Club, Lincoln, Nebraska. The occasion was the celebration of the host's 38th anniversary in Lincoln. Also, he had the desire to see fulfilled a long contemplated plan for a meeting of the medical profession, with leading representatives of other vocations for the exchange of ideas and the creation of a friendly fraternal spirit.

Dr. Edward W. Rowe presided as toastmaster and introduced Dr. Palmer Findley of Omaha, President-elect of the Nebraska State Medical Association.

The program was opened by Dr. K. S. J. Hohlen, President of the Lancaster County Medical Society. Several original and selected violin numbers were rendered by Fred Cardin, accompanied by Miss Margaret Malowney on the piano. Mr. Cardin is the most famous composer of Indian music and also a teacher. He himself is a Miami Indian.

Toasts

1. "The Relation of Finance to the Medical Profession;" by Hon. W. A. Selleck, President Lincoln State National Bank.
2. "The Relation of the Chamber of Commerce and Civil Affairs to the Medical Profession;" by Walter S. Whitten, Secretary Lincoln Chamber of Commerce.
3. "The Relation of Law to the Medical Profession;" by Mr. Fred C. Foster, Attorney-at-Law.
4. "The Relation of Schools to the Medical Profession;" by Mr. M. C. Leffler, Superintendent Lincoln Public Schools.
5. "The Relation of the Church to the Medical Profession;" by Rev. John Andrews Holmes, Pastor First Plymouth Congregational Church.

(—E. W. Rowe)

Meeting of the **Lancaster County Medical Society** held Saturday evening, December 6, 1924.

Dr. E. W. Rowe read a paper entitled, "X-Ray Interpretations of the Upper Gastro-Intestinal Tract." Dr. Rowe showed a number of slides and charts to demonstrate the different normal and abnormal conditions found in the region of the stomach. He outlined many differential diagnostic points explaining the various manners of interpretating x-ray findings. He especially insisted that the radiologist should interpret his findings with an unprejudiced mind; therefore, making it less liable for him to be lead astray in making some conclusion. He urged co-operation between the various specialities in determinging the results of the examination.

At the conclusion of Dr. Rowe's paper a moving picture film of the Complex Motor Phenomena of the Human Stomach, Cap and Duodenum, prepared by Dr. Lewis G. Cole, was shown. This is truly a great reproduction of the stomach activities. The presentations are perfect and the reproduction so clear that it affords a perfect view of the different phases of the stomach activity.

In opening the discussion of the evening program Dr. R. L. Smith, spoke especially of the various positions necessary to show a proper reproduction or study of the intestinal tract. Dr. Smith also urged more thorough use of the x-ray as an aid in finding some relative cause for the affection. He pointed out that many gastric symptoms are caused or aggravated by a pathological condition in some remote portion of the body. Dr. M. L. Flanigan spoke of the difficulty of interpretation the difference between malignant conditions and syphilis and the similarity of their disturbances of the gastric-intestinal tract.

Dr. G. W. Covey considered the x-ray very essential in showing the motor activity also any areas that were abnormally unactive. He called attention to the extreme expense attached to the complete radiological study and suggested that as much care as possible should be used not to make the bill prohibitive.

Dr. A. R. Mitchell insisted the x-ray was not the most important implement of diagnosing but was secondary to physical findings.

Dr. H. J. Lehnhoff considered the x-ray to be of greater help in the study of gastro-intestinal disturbances than of any other regions of the body.

Dr. C. Emerson considered the picture film had completely changed his idea of the activities of the stomach especially with relation to the duodenum and cap.

Dr. C. C. Hickman considered this one of the most interesting modes of studying comparative anatomy.

Dr. D. C. Hilton considered that the comparison of the x-ray and clinical signs should be used. However, the clinical history should be of greater weight, also physical signs, than the x-ray niterpretation.

Dr. H. J. Wertman of Milford, spoke for the visiting physicians expressing great pleasure at having been present at so interesting a meeting.

In closing Dr. Rowe urged the co-operation of the speciailists with the internists and the radiologists to determine the final opinion. The entire assembly was greatly pleased with the study of the evening in-as-much as it had furnished a complete discussion of the upper gastro-intestinal tract.

(—D. D. Sanderson, Sec.)

The Republican Valley and Tenth Councilor District Medical Society held an interesting meeting Oct. 30th in the Ball Room of the Clarke Hotel, Hastings. Sixty doctors and their wives enjoyed the hospitality of Dr. and Mrs. Fast at a luncheon served at the State Hospital. Reverand N. J. Breed of Hastings spoke delightfully at the luncheon — his subject being the "Method of the Election of Presidents of the United States". Immediately following the luncheon, President E. B. Hamel called the business meeting in the Clarke Hotel.

The following officers were elected for 1925: R. D. Green, Beaver City, president; K. P. Palmer, Holdrege, secretary; C. R. Spicer, Hastings, treasurer.

Following the business meeting an interesting symposium on diseases of the kidney was enjoyed.

The spring meeting will be held in Franklin, May 31, 1925.

(—Elizabeth Mason-Hohl, Sec.)

A meeting of the **Holt County and Eighth Councilor District Medical Societies** was held at Atkinson, October 16. The program consisted of presentation of cases and reading of papers. A short history was given with the case presented, after which there was general discussion of the case.

The following is a list of the papers given:

"Insulin", Dr. D. C. Sigworth, Norfolk; "The Diagnosis and Treatment of Congenital Hypertropic Stenosis", Dr. H. M. McClanahan, Omaha; "Gall-Bladder Surgery", Dr. T. J. Dwyer, Omaha; "The Practical Points About Examination of the Eyes", Dr. Jas. C. Tucker, Beatrice; "Vertigo", Dr. A. Sachs, Omaha.

The following officers were elected for the ensuing year:

Dr. Chas. H. Root, president, Bassett; Dr. F. L. Wilson, Sec'y-Treas., Stuart. Dr. R. E. Kriz of Lynch, Nebr., was delegated to represent this society at the next State Medical Meeting.

(—F. L. Wilson, Sec.)

The Third Annual Meeting of the **Twelfth Councilor District Medical Society** was held at Scottsbluff, November 17th.

Dr. M. J. Baskin of Alliance read a paper on the "Treatment of Infections with Mercurochrome 220 and Gentian Violet Intravenously". Dr. Frost Buchtel, Denver, read a paper on the "General Preoperative and Postoperative Treatment of Surgical Cases". Dr. J. R. Taylor, Sidney, a paper on "Obstetrical Procedures". Dr. J. E. M. Thompson, Lincoln, gave an illustrated talk on "Fixed Traction in the Treatment of Fractures". Dr. A. L. Miller, Kimball, was elected president; Dr. W. C. Harvey, Gering, was reelected secretary-treasurer.

A turkey dinner was enjoyed by the fifty guests, during which Supt. Fred Nelson of Gering with his orchestra, entertained the banqueters in a very acceptable manner by several selections. Rev. A. H. Hanscom of Scottsbluff gave the address of the evening on "Our Need of Each Other". All who attended this meeting came away enriched in scientific knowledge and with a wider viewpoint of the practice of medicine.

(—W. C. Harvery, Sec.)

The Sixth Councilor District Medical Society met at Seward, November 20th, for an all-day session. Dr. Irving S. Cutter, Dean, University College of Medicine, gave an address to which the general public was invited. His talk was on public health, progress made in surgery and medicine, medical ethics and what the public has a right to expect from the medical profession.

The **Keith-Perkins County Medical Society** was entertained by Dr. and Mrs. J. B. Redfield, North Platte, at the Palace Hotel, November 25th. The annual meeting also was held.

Forty members attended the annual meeting of the **Third Councilor District Medical Society** at Table Rock, under the chairmanship of Dr. C. P. Fordyce, councilor of that district. Programs were given afternoon and evening. A six o'clock dinner was served. Program follows: "Anaemia", Dr. E. McCrea, Table Rock; "Headache", Dr. B. A. Smith, Auburn; "Blood Transfusion", with slides, Dr. S. E. Isaacson, Omaha; "Simplified Infant Feeding", Dr. E. R. Hays, Falls City; "Fractures", Dr. J. S. Welsh, Lincoln; "Puerperal Sepsis", lantern slides, Dr. Palmer Findley, Omaha; "Electricity in Medicine", Dr. R. W. Fouts, Omaha; "Subacute Infective Endocarditis", Dr. J. C. Waddell, Beatrice.

Dr. W. W. Duke, Kansas City, spoke before the **Omaha-Douglas County Medical Society**, at the annual meeting, December 9th.

Dr. Rodney W. Bliss, was elected president and Dr. Earl C. Sage, was reelected secretary-treasurer.

The annual meeting of the **Omaha Surgical Club**, December 8th, featured a dinner with Dr. Horace Wetherell, Denver, guest of honor. Dr. Wetherell spoke of "Our Relation to the People and the Public Health". Officers elected for the ensuing year are: Dr. B. B. Davis, president; Dr. W. L. Shearer, secretary-treasurer (reelected).

HUMAN INTEREST TALES

Brady, this state, is again without a physician.

Dr. E. E. Miller, of Omaha, has located at Belden.

Dr. C. S. Molseed, Omaha, has recovered from a recent severe illness.

Dr. and Mrs. Willard Quigley, Omaha, have returned from Europe.

The new Lincoln General (city) hospital is approaching completion.

The Red Cross sponsored a free nose and throat clinic in Pawnee City recently.

Dr. R. W. Hille, for the past year in practice at Comstock, has located at Arcadia.

Drs. S. P. Vail and Guy Seward, Fremont, have become associated in the practice of medicine.

Dr. D. A. Moore, formerly in the Indian Service at Winnebago, has returned to Winnebago to practice.

Dr. Chas. E. Abbott, Minden, was found guilty of a statutory charge recently and sentenced to 10 years in the penitentiary.

Dr. J. M. Mayhew, Lincoln, gave an address before the Gage county medical society at the Hepperlin clinic, November 18th.

Dr. A. E. Gadbois and Dr. C. E. Sayre, Norfolk, assisted at the Winner, S. D., public health clinic the second week in December.

A Kjeldahl distilling apparatus has been placed in Grand Island college through the generosity of Dr. J. M. F. Heumann, Omaha.

Dr. A. A. Martin, Toronto, Canada, a former Pierce, Nebr., physician, was married recently to Miss Eleanor Rose Walker of Toronto.

Dr. F. O. Beck, Omaha, driving his car, unavoidably struck down a deaf and partly blind octogenarian, resulting in the death of the aged man.

Misfortune piled up on Dr. J. G. Neely, Winside, recently. Two of his daughters were operated on for appendicitis and the doctor was in an auto wreck in the same week.

Salve, in the form of ten thousand dollars, is asked from two Omaha surgeons for wilfully, negligently, and presumably, with malice aforethought, not promptly curing a case of osteomyelitis, in a 19-year-old boy.

Dr. David C. Hilton, Lincoln, won the malpractice suit against him in the Lancaster county district court, wherein because of the result obtained in a case of fracture of the thight in a minor $15,000 damage was claimed.

A Legion Clinic is being organized in Omaha for the benefit of disabled former service men. Foremost in the movement are Dean Cutter of the University medical college, Dean Schulte of the Creighton medical college and Dr. W. N. Anderson.

Dr. Charles A. Flippin, an aged colored doctor of Grand Island, had his license to practice revoked by the state board for conduct involving moral turpitude, and to which he had plead guilty. It is said that 3,000 persons had signed a petition requesting the board not to revoke the license. Herein is a text for a sermon.

NECROLOGY

Carl L. Swanson, Omaha; Omaha Medical College, 1897; a practicing physician in Omaha for twenty-five years; died November 24th, after an illness of about four years, aged 52 years. A widow and daughter survive him.

Mary J. Breckenridge, (retired), Tacoma, Wash.; General Medical College, Chicago, 1883; for many years in practice in Omaha, more recently a resident of Tacoma, Wash., died at the latter place November 9th, aged about 84 years. Burial in Omaha.

William K. Speice, Chicago; Rush Medical College, 1895; eye, ear, nose and throat surgeon; a member of a pioneer Columbus, Nebr., family; died in Chicago, November 29th, aged about 53 years.

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, February, 1925 No. 2

CONTENTS

Page

The Differential Diagnosis Between Abdominal Cysts — Intraperitoneal and Retro-Peritoneal, John E. Summers.........37

Mercurochrome Therapy — Case Reports, C. A. Roeder, M. D.; W. H. Judd, M. D...41

Seminal Vesiculitis, Arbor D. Munger, B. Sc., M. D..........44

Vincent's Angina, A. A. Conrad, M. D.......48

The Kidney of Pregnancy, J. N. Campbell, M. D. 52

Physiotherapy in Pulmonary Tuberculosis, Miles J. Breuer, M. A., M. D., F. A. C. P..56

Treatment of Acute Suppurative Otitis Media, H. B. Lemere, M. D..........59

The Treatment of Diabetes Mellitus from the Standpoint of the General Practitioner, P. A. Sundbury, M. D..........61

Report of Two Unique Cases, A. C. Stokes, M. D. 63

Necropsy Report — From the University Hospital, Omaha 64

EDITORIALS—

Call for Papers..........66

Annual Dues 66

The General Practitioner and the Annual Meeting 66

What Should Be the Attitude of the Regular School of Medicine Toward the Various Cults in Medicine?.......67

Maude Slye and Her Mice..........68

Society Meetings 68

Editorial Paragraphs 69

The Societies 70

Human Interest Tales..........71

Necrology 72

THE DIFFERENTIAL DIAGNOSIS BETWEEN ABDOMINAL CYSTS,—INTRAPERITONEAL AND RETRO-PERITONEAL*

John E. Summers, M. D., Omaha, Nebr.

Notwithstanding the fact that clinical experience in the study of the pathology of the living has greatly advanced our knowledge, it occasionally happens that before operation we are in considerable doubt as to the nature of an abdominal tumor because its history, position, and anatomical relations seem to differ from that of other tumors with which we are most familiar.

Most of the intra-peritoneal cystic tumors of the abdomen which are proven as such by operation, are ovarian in type—practically all others are inflammatory or parasitic, having their foci of infection usually in the liver, occasionally in the spleen. The retro-peritoneal cystic tumors are those of the kidney and pancreas, or springing from these locations and in intimate relationship with them, but without histological or pathological relationship except by contiguity of tissue. Embryological pathologists differ in opinion as to this latter statement. Mesenteric cysts, which are of rather rare occurrence, only about 250 having been reported, are among the other tumors having a retro-peritoneal origin. The weight of evidence seems to be that these mesenteric cysts have their origin in the Wolffian bodies, although there are obscurities in the evidence about which learned embryologists do not agree. Seldom will it be found in the literature that there is an agreement as to their origin. There are para-renal tumors which are more common in women than in men. There are cystic tumors in relationship with the pancreas which present clinical findings identical with those of pancreatic cysts; they can only be differentiated the one from the other, in that the latter's wall, in greater or less degree, is made up of easily microscopically identified pancreas tissue Likewise, true mesenteric cysts must not be confused with cysts having their origin elsewhere, but which secondarily in their development become more or less involved with the mesentery. Non-inflammatory cysts of the omentum, which are median tumors and rare findings, may be of large size. They originate in the lesser peritoneal cavity — the communication between this cavity and the space between the folds of the omentum not becoming obliterated and shut off from the lesser peritoneal cavity, until after its walls had become distended and a locus for a potential cyst formed. This is in a way analagous to the failure, or rather delay, of obliteration of the vaginal process of the peritoneum. The peritoneum fuses at the internal ring, but a continuity exists in the canal, which may result in the formation of an inguinal or dumb-bell hydrocele.

---

*Read before the Western Surgical Association, French Lick Springs, Ind., Dec. 5, 1924.

During the past summer two experiences impressed me as of sufficient interest to remark upon them, as well as to call attention to several clinical findings and the methods of their development, which may be helpful in arriving at a conclusion as to the pathology of an abdominal tumor, particularly one of a cystic type, and whether the tumor is intra- or retro-peritoneal in origin.

Case No. 1. Mrs. R., age forty-five, was referred from the dispensary to the University Hospital with the diagnosis of abdominal tumor. She came under my service. The family history was negative. In her early womanhood she had been sent to the Tyrolean Alps, because of "weak lungs." With this exception, there was nothing of importance concerning her health until three years before, when she first noticed a lump in her abdomen, which, although it gradually developed, gave no pain until six weeks previous to her coming to the dispensary, when she began to feel "long," sharp pains over the abdomen, and was very sick. There was nausea but no vomiting. The patient was not confined to bed, but was kept awake at night from pain. In making a general physical examination it was noted that she was suffering from chronic bronchitis with a suspicious dullness over the power portion of the left lung behind; the blood findings were normal as well as the kidney function. Inspection of the abdomen showed venous varicosities in the wall. There was a large mass in the mid-umbilical region extending mostly toward the left side (flank). The mass was rather freely movable upwards and downwards, asymmetrical, but smooth (not nodular) in outline; firm but fluctuating; no apparent attachment, i. e., pedicle. Percussion elicited a resonance varying from very faint to positive, the latter over the outer and lower borders. Being at the time much interested in the subject of peri-renal cysts, and therefore slightly obsessed with the idea, I made a diagnosis of a tumor of that nature. Operation disclosed the tumor to be a large pancreatic cyst, the tail of the pancreas being involved in the cyst wall. Eneucleation was, therefore, imprudent and marsupialization was done. The woman left the hospital with the lung condition unimproved and with a positive icterus, the cause of which I did not understand. The ultimate result has not been reported.

Case No. 2. Mr. A., age seventy-three, a farmer, came to the Clarkson hospital as a patient of Dr. Edwin Davis, Urologist; referred because of a large median tumor extending from the symphysis pubis to above the umbilicus, comparable to a six month's pregnancy. The case was supposed to be one of a peculiar kind of retention of urine, a big, distended bladder, and it looked like it. An accurate history was impossible because of the patient's mental sluggishness and inability to speak English. It seems that he had not been aware of an abdominal mass, and that only during the ten days preceding his coming had he noticed discomfort. No severe pains. There was no history of urinary frequency or nycturia or other obstructing symptoms. The pain of a distended bladder was absent. He had complained of severe constipation, and there was a suspicious history of threatened obstruction of the bowels.

Examination disclosed a rather poorly nourished old man, who had lost weight. The large tumor was tense, firmly fixed, not tender. Percussion note was flat over its whole dome, over the sides, i. e., around its periphery, it was slightly resonant. It had, however, a physical sign present to which I wish to call particular attention, an aneurysmal pulsation, expansile. Any tumor more or less fixed in position over the course of the aorta may give a transmitted impulse, but not an expansile pulse, unless it is an aneurysm. I think it is readily conceivable that more or less flattened intestinal coils with their large mesenteric blood supply enveloping a cyst wall, can produce an expansile pulsation of the cyst when firmly palpated between the two hands. In this instance, this was easily demonstrable and was a sign of sufficient importance to suggest strongly the correct diagnosis.

Catheterization, cystoscopy, and rectal examinations eliminated the bladder from any connection with the tumor. A pre-operative diagnosis of either a cyst of the urachus or a mesenteric cyst, was made and recorded. Operation disclosed a large mesenteric cyst, the fixation of which was due to strong adhesions. It was eneucleated. It would have been better judgment to have done a marsupialization because of the man's general condition. The operation was difficult; flattened coils of small bowel were in intimate relationship with the sac, and although little trauma was done, some suturing was necessary to repair the mesentery, and one apparently not important artery had to be ligated and divided. The patient died six days after operation, having had a complete suppression of urine for two days. No post-mortem was obtainable.

Pathologists's Report: By Dr. F. Niehaus.

Cyst removed from mesentery measured sixteen cm. in diameter. It consisted of a firm fibrous wall, the contents of which shelled out very easily. This was composed of a soft, glairy material. The cyst was further divided into compartments measuring one to five cm. in diameter. The centers of these compartments were filled with a grayish, creamy material.

In the center of these cysts, degenerations was more marked. The individual compartments consisted further, of small cysts measuring two to three mm. in diameter. These were filled with the same kind of fluid.

Microscopic examination showed the wall of these minute cysts to consist of fibrous septa. There were no cells present except a few lymphacytes lying along the septa.

Smears from the fluid showed an occasional lymphacyte, otherwise the fluid was homogenous and acellular. There was nothing gross in microscopic examinations to suggest this cyst originated from intestinal structures, such as epithelial cells or smooth muscle, and it seems likely that it originated from retro-peritoneal organs such as Muller's duct, or Wolffian bodies. Diagnosis, mesenteric, cyst.

The differential diagnosis of abdominal cysts is interesting and important, and I want to emphasize what my experience and observation have taught me.

In considering the diagnosis of these tumors, in fact of all abdominal tumors, I like to look upon the abdomen as divided into a supra-umbilical and an infra-umbilical region, the former having its epigastric area and its sides merging off into the ileo-costal flanks; the infra-umbilical area having its suprapubic area and its iliac areas. In each of these areas is normally found organs subject to inflammatory or tumor pathology.

Intra-peritoneal cystic tumors of the upper abdomen which we may first consider, are those of the liver. Tumors of the gall-bladder, whether attributable to cholecystitis and inflammatory obstruction of the cystic duct, or the result of malignancy beyond the cystic duct, I will not discuss.

All of the cystic tumors of the liver with which I have met, have been caused by hydatid disease, and all cystic tumors of the liver, whether indicating infection or not, should be viewed with that suspicion; however, they may be secondary to a trauma. Secondary liver abscesses are beyond the scope of my remarks. Large cysts of the liver are not difficult to recognize when they present well below the costal border; they may extend downwards towards the right iliac area. The tumor moves with respiration, has a tense cystic feel, is dull on percussion, and the area of dullness extends upwards and continuously to about the fifth rib. There is no marked bulging in the ileo-costal space. Small cystic tumors of the liver presenting in the right hypochondrium, have the same characteristics as the larger ones, only less prominent. The only cystic tumors of the liver that I have seen, which have been difficult of recognition, are of two kinds: Those of the dome of the liver, and those under the border of the liver in the neighborhood of the gall-bladder. An enlargement of the liver not otherwise explainable, where the physical signs and the x-ray picture indicate a bulging of the dome of the liver and an elevation of the diaphragm on the right side, should lead one to suspect a cyst of the dome. In an incidence of this kind I opened the abdomen, ran my hand over the dome of the liver, recognized the cyst, a large one, and later successfully attacked it by the transpleural route. In another instance I opened and drained a suppurating hydatid cyst of the under surface of the liver, having operated for a supposed suppurating gall-bladder. How such a mistake can be avoided, I do not know. Happily, in this instance, the patient recovered. A cyst of the left lobe of the liver may be mistaken for a cyst of the spleen. I would like to emphasize the danger of aspiration of any kind to aid in the diagnosis of these tumors; if an exploration is necessary, let it be a surgical one. It is said that any trauma to a hydatid tumor may cause absorption of hydatid fluid, and urticaria is apt to result—a diagnostic tradition to be remembered.

Whenever a spleen is palpable it is pathological; it projects more or less in the flank, but in a forward-downward direction, and does not bulge in the posterior ileo-costal space, although its normal position is behind the tenth rib and behind the anterior-axillary line. The spleen moves with respiration. A cystic tumor of the spleen in which the cyst involves the greater or lesser portion of the palpable tumor, more or less obliterates the identifying notch of the spleen, but has palpable cystic characteristics, is more or less in front of the kidney area, can be identified from a kidney cyst by percussion, air distension of the colon, the x-ray and the pyelogram. From the para-renal cyst it loses one of these identifications, the last.

Of retro-peritoneal cysts I wish to discuss briefly the pancreas, renal, para-renal, and the mesenteric. The accurate diagnosis of these tumors is not easy even in the most experienced hands. Mesenteric cysts are very rarely diagnosed before operation, and in our case I feel that we were fortunate in considering the diagnosis. If the patient had been a woman, I doubt if the origin of the tumor would have been placed outside of the pelvis.

Of the pancreatic cysts that I have personally observed and operated upon, only one has presented in the gastro-colic omentum, i. e., above the stomach. All of the others have pushed forward between the stomach and the transverse colon. Cysts have been reported presenting below the transverse colon. These cystic tumors are not as a rule hard to diagnose when of presumable size; they are mobile, and more or less surrounded by an area of tympany which can be increased by dilating the stomach with air. If the dilated stomach can be made out covering much of the upper part of the cyst, and the transverse colon, also dilated with air, found to be in intimate relationship with the lower area of the tumor the diagnosis is practically made. I sometimes dilate the stomach, if a sound one, by the administration of a small Seidlitz powder, letting the mixture take place within the stomach. The use of a stomach tube for this purpose is often, in the nervous individual, an unnecessary procedure.

Small palpable tumors of the kidney are felt in the ileo-costal space; large tumors push themselves forward, inward, and downward, so as, in some instances to imitate large ovarian tumors. Such tumors must first be shown not to have a pelvic origin. I am of the opinion that all of these can be recognized if the means at our command are intelligently employed. Every renal tumor starts from a known locality and has in its beginning, relationships which cannot be completely changed; they are only stretched—strained. These tumors occupy a considerable part of the lumbar space; they tend to bulge the ileo-costal space. Place one hand in this space and the other over the tumor, and palpate, and a wave of recognition follows, the cystic wave. There is little displacement except upwards and backwards. Distention of the colon with air gives its relationship anterior. The use of the cystoscope and determination of kidney function, the making of a pyelogram, and a general x-ray examination of the abdomen, to determine the relationship of the intestines and viscera, will, if painstakingly made, clear up the diagnosis of almost any conceivable case.

The para-renal tumors have been little discussed; they differ from retro-peritoneal tumors having their origin in the kidney space. They take their growth in the perirenal capsule, and according to V. Jura, keep their relationship with the kidney. Their origin may be from Wolffian elements. This is explained by the activity of the embryonic elements in the region. Jura says, "these tumors can be of enormous size; they take on the diagnostic characteristics of kidney cysts. The kidney of that side is normal, but unfortunately has been removed together with the tumor in one-half the cases reported, its relationship being so close. These tumors, besides being cystic, may be lipomas, myxomas, sarcomas, and even mixed tumors." When cystic, the sac is blue in color, easily eneucleated, leaving the kidney whole or else thinned by pressure at some small surface.

Mesenteric cysts, as I have said, are rare findings. The methods of dealing with them do not depend upon a fixed rule because of the different relationships they may bear to the integrity of the more or less enveloping intestinal coils. The diagnosis may depend upon this relationship, as was in evidence in my case. I am of the opinion that an expansile pulsation can be appreciated in a similar case if carefully looked for, provided the abdominal wall is not too heavy. All of the signs which have been attributed as diagnostic of mesenteric cysts are unreliable. The so-called mobility may not exist; it may be prevented by adhesions, as in Case II. These cysts do not, as a rule, grow to the size of several of the abdominal cysts for which they may be mistaken; they are generally almost median in position. When mobility exists it is marked from side to side, and in women is differentiated from the usual ovarian cyst by an area of sonority between its lower part and the pubis. Urachal cysts are differentiated from ovarian cysts by being nearer the abdominal wall. In moving the cyst from side to side there is a tendency for the umbilicus to be drawn with it. Ovarian cysts, whether mobile or twisted, lie further from the abdominal wall.

As far as I am informed there is no definite characteristic by which a mesenteric cyst can be recognized. Modern methods as aids to our senses give promise to the elucidation of many of our problems. Remembering the natural relationship of the different organs of the abdomen one with another, intra-peritoneal and retro-peritoneal, let us first consider palpation and percussion, (if necessary, this made more definite by means of air artificially introduced.) Perhaps auscultation of the abdomen may be of value in recognizing a tumor rich in blood vessels. The x-ray may in certain instances show clearly a tumor enveloped by coils of small bowel. Again, if the cyst bulged forward with a few or no coils in evidence, the picture would be deceptive. I have never as yet, employed pneumo-peritoneum in an effort to differentiate an abdominal tumor, but it evidently has its possibilities and should be employed when thought advisable.

It would be interesting to review the opinions of those best informed as to the reasons for the formation of the several kinds of cystic tumors of the abdomen; but my reading teaches me the futility of personally acquiring a definite opinion because there is such a diversity of opinion among men who have made exhaustive studies in this direction. Of course, we should all strive to acquire what I have termed "embryological-pathological" knowledge; it is the key to the diagnosis of most of our surgical tasks.

MERCUROCHROME THERAPY—CASE REPORTS

C. A. Roeder, M. D.; W. H. Judd, M. D. Omaha

Following Young and Hill's report on the remarkable results obtained in treating acute pyogenic infections by the intravenous administration of mercurochrome 220, we began using it when the opportunity presented itself. Our experience is based upon twelve cases from which we have come to the definite conclusion that mercurochrome has a place in our therapeutic armamentarium, providing it is administered while the patient is still displaying a resistance toward the present infection. It has been without benefit in the terminal stages of our fatal infections, i. e., after the patient has lost his resistance. Mercurochrome, like all other therapeutic non-biologic adjuvants, requires tremendous assistance on the part of the body economy. It is not a specific for any one type of organism, and it cannot be looked upon as a neutralizer of toxins, which also indicates that it must be administered early. We have also noted that the greater the reaction obtained the more favorable the result: temperatures rising to 106-107.5, with the urine, vomitus and frequent fecal movements colored with the dye may appear alarming, but in our experience such patients have received the best results and have been harmed in no way with the exception of a salivation which has disappeared in a short time. If the mercurochrome 220 does not destroy or retard the growth and activity of the dominating infecting organism it stirs up a resistance or a reaction which in turn destroys the bacteria.

Case No. 1. W. H. S., female 46, white, married, adiposity marked. Complaint—bleeding from left nipple over a period of one year. No mass palpable, perhaps due to extreme adiposity. Left breast removed by Warren incision. No tumor mass was found at operation, but pathologist discovered a nodule 1 c. m. in diameter which was a definite adenocarcinoma. Post-operative course uneventful until twentieth day when a small slough was trimmed from the flap, followed in twenty-four hours by a steady rise in temperature and pulse. Three days later the temperature reached 105, pulse 140, blood count 22,000, the patient presenting a markedly septic appearance. The blood culture carefully taken at this time showed staphylococcus albus, which quite likely came from the trimming of the slough. Thirty cubic centimeters of a one per cent mercurochrome solution was given intravenously, followed within one hour by a twenty minute chill, a rise in temperature to 106 and pulse 150. In three hours the temperature fell to 100.8 and the pulse to 90. In twelve hours the clinical picture was markedly changed, although there was still some vomiting with moderate salivation. General improvement was rapid and the patient was discharged seven days later, with a small persisting sinus. Twenty-one days later a typical erysipelatous infection developed around this sinus, extending over an area about eight inches in diameter. Twenty-four hours after onset of this infection she had a temperature of 101.4 and pulse 110. Local treatments of saturated magnesium sulphate were started immediately, but twelve hours later the temperature rose to 104, pulse 130, with extension of the erysipelatous margin. Thirty cubic centimeters of a one per cent mercurochrome solution were given intravenously, followed within one-half of an hour by a chill, temperature of 106.6 and pulse 150. In twelve hours the temperature had dropped to 100 and the pulse to 90. Within twenty-four hours the erysipelas faded remarkedly. On the second day following the mercurochrome therapy the temperature reached normal and remained there, with an almost entire disappearance of the redness in the skin.

Case No. 2. W. G., male 19, colored, single. Negative venereal history and Wassermann. Complained of malaise, fever, headache, a throbbing pain in the left tibial region and a marked swelling of the leg from the knee to the ankle joint. There was an ulcer over the tibia which had refused to heal since its traumatic origin about one month previously. He had been confined to bed for one week, with gradual extension of a cellulitis throughout the deep structures. The appearance of the infection

---

*Young, H. H.; and Hill, J. H., J. A. M. A., March 1, 1924.

partially resembled erysipelas, but the marked involvement of the deep structures without the typical skin picture resembled more a cellulitis. There was a brawny induration throughout the entire leg with no fluctuation, a condition wherein an incision did not seem advisable. There was no improvement after conservative treatment for a few days in the hospital, temperature in the afternoon averaging 103, pulse 120, and leucocytes 11,000. Four days after entering the hospital the temperature had mounted to 104.8, with a marked involvement of the inguinal glands and a general picture of spesis. Thirty cubic centimeters of a one per cent mercurochrome solution were given intravenously, followed by a rise in temperature to 105, a chill, vomiting and diarrhoea, witha marked accentuation of the pain in the leg. In twelve hours the temperature had dropped from 105 to 97.6 and did not rise above normal later. The general improvement from there on was steady with a rapid absorption of the inflammatory products. The patient was dismissed six days after the mercurochrome therapy with the ulcer one-half the original size.

Case No. 3. B. F. G., female 55, white, married. Came to the hospital with an enormously swollen hand and forearm which had followed a cut on the thumb a few weeks previously. Several incisions had been made, but the infection had resulted in a brawny induration with a very little drainage. There was no apparent general toxic condition; the patient's temperature was slightly above normal, leucocytes 9,100. Owing to the nature of the infection, a lack of fluctuation, and the fact that previous incisions had resulted in no improvement, thirty cubic centimeters of a one per cent mercurochrome solution were given intravenously, followed by a chill, a rise in temperature to 103, vomiting and diarrhoea. Twenty-four hours later the hand had decreased fully one-half in size, the skin lying in loose, deep folds. Several incisions ten days later were necessary to evacuate accumulations of pus.

Case No. 4. H. Z., male, 2½ years, white. Presented a picture resembling pneumonia, with a possible infection in the region of the appendix. The cough, flushed face, and marked coryza contraindicated an abdominal operation at that time. There was moderate rigidity of the abdominal muscles, with considerable pain and tenderness throughout the lower portion, and a general picture of extreme toxemia. Breathing was of a typical pneumonic type with a respiratory grunt, and the lungs presented numerous coarse, moist rales scattered throughout both bases. Temperature was 103, pulse 140 and respiration 50, with a leucocytosis of 25,000. A pneumococcic peritonitis was thought of on top of a pneumonitis, and the patient was treated conservatively for several days. Forty-eight hours after admission there was an increase in the abdominal picture, with a recession of the pulmonary, and under local anesthesia pus was drained from the region of the appendix. No attempt was made to remove the appendix. Twenty-four hours following the operation the temperature rose to 105, with a pulse of 160, and respiration varying from 32 to 52. The patient looked as if recovery were impossible, and eighteen cubic centimeters of a one-half per cent solution of mercurochrome were injected into the jugular vein, followed by a temperature rising rapidly in a few hours to 107.5, with a pulse too fast to count. Five hours following the injection the temperature had dropped to 102 and pulse to 120, respiration to 30. There was a gradual recession of the pulse rate and temperature for several days, which was then followed by a rise in temperature to 103, pulse 140, and a physical examination presenting a typical lobar pneumonia in the right lower lobe. Four days after the pneumonia had become manifest, the condition was again extremely critical, with almost continuous vomiting, on top of a picture of extreme toxemia, temperature 104, pulse 150 and the patient almost comatose. Eighteen cubic centimeters of a one-half per cent mercurochrome solution were again injected into the jugular vein, with reaction less marked than previously, temperature not going above 104, but in twenty-four hours there was definite improvement with a gradual slowing of the pulse and a lowering of the temperature. Eight days following this reaction with the temperature now 99 to 100 there began a typically septic course, the temperature varying from 100 to 105. A sub-diaphragmatic abscess was kept in mind, which was more or less suggested by the skiagram. Needling, however, was negative, nor could we palpate any purulent accumulations in the peritoneal cavity nor in the pelvis. Fortunately on the tenth day after the second administration of mercurochrome, there was a sudden discharge of considerable thin pus from the wound. In twenty-four hours the patient appeared greatly improved, and during the next thirty-two days there was a steady improvement with complete recovery.

Case No. 5. C. E., male, 41, white, married. Twenty-four hours following drainage of a retrocecal appendiceal abscess, a picture of advancing peritonitis was very evident. The pulse rose steadily to 130, and temperature to 102. Thirty cubic centimeters of a one per cent solution of mercurochrome were injected intravenously, followed by a rise in temperature to 104, and with diarrhoea. In forty eight hours the temperature was down to 99 at four P. M., and the pulse 80. The change was so striking that it was evident that mercurochrome was the deciding factor.

Case No. 6 R. H. M., male, 29, white, married. Came to the office with a urethral discharge which had persisted since he contracted gonorrhea four years previously. He had the usual treatments but the morning drop persisted. Thirty cubic centimeters of a one per cent solution of mercurochrome were given intravenously at the office by W. H. J., followed by what he stated was a "terrific reaction," i. e., chills, vomiting, diarrhoea, and an immediate disappearance of the discharge, which was the first time in four years. Two weeks later, although the discharge had not recurred, he was given a second injection. Two months later he said the urethral discharge had not reappeared.

Case No. 7. E. C. B., male, 24, white, single. Contracted gonorrhea five years previously, again two years ago, with the present attack one month previously. Presented a picture of a subacute urethritis, vesiculitis, prostatitis and epididymitis. He could hardly walk and was in a condition where local treatments were out of the question. Was sent to the hospital, and without any attempt at local administration, thirty cubic centimeters of a one per cent mercurochrome solution were injected intravenously, (W. H. J.), followed by a chill, temperature 104 in a few hours, with vomiting and diarrhoea.

There was a marked recession of all the signs and symptoms in forty-eight hours, and on the fifth day following the first injection it was necessary to drain an abscess in the right epididymis. Seven days after his admission to the hospital and with no other treatment he was up and about, with a very small morning drop in which no gonococci could be found. The urethritis persisted to a very slight degree, but his generalized infection which he first presented receded so rapidly that the value of the administration of mercurochrome in his case cannot be doubted. A chronic urethritis, however, persisted and he was referred to a urologist for local treatment.

Case No. 8 E. F. S., female, 34, white, married. Two years previous to present complaint caught a "severe cold", lasting several weeks and accompanied by considerable pain in region of left kidney. At the same time she noticed the urine was bright red, which her physician said was due to blood; and since has had numerous attacks of this pain accompanied by hematuria. Three weeks before present consultation, developed dull pain in lower left quadrant of abdomen, which shifted into the left lumbar and lower thoracic region, accompanied by marked hematuria, chills and night sweats; her temperature was above normal daily, reaching 103 at times. Urine from the left kidney showed pus and blood in abundance with a marked growth of colon bacilli. The x-ray showed no stones. Following thirty cubic centimeters of a one per cent solution of mercurochrome intravenously the temperature rose from 103 to 106, and in twelve hours dropped to 96 and remained below 99 with a complete disappearance of pain, urinary frequency and hematuria. Three months later felt perfectly well, the first time in two years.

Case No. 9 L., female, 24, married. Came complaining of pain in the left costo-vertebral angle, weakness and cloudy urine, with a history of similar trouble extending over four years. A right sided nephrectomy was done two years ago, elsewhere, the indications for the operation I could not ascertain. There was an indefinite mass in the left kidney region, quite tender on pressure. Catheterized urine contained albumen, many epithelial cells, pus, staphylococci and diplococci. Repeated kidney function determinations showed no excretion of phthalein during the first hour and never more than two per cent in the second hour. During two weeks of rest, diet and general hospital management there was no visible improvement. Temperature ran between 98.2 and 99.2 and the physical and urinary conditions were stationary. Because of the presence of only one poorly functioning kidney we hesitated before trying mercurochrome but decided to give twenty cubic centimeters of a one per cent solution. (Patient's weight 100 pounds.) The usual reaction followed with chill, emesis and diarrhoea, followed by a temperature rise to 102.4. Each morning thereafter for five days the temperature was normal but reached the vicinity of 101 in the afternoon. After the second day all subjective symptoms were entirely relieved. There was less tenderness over the palpable kidney and a greatly increased amount of urine was excreted. The phthalein test one week later showed an increase to ten per cent by the end of the second hour, but a culture from the urine showed the same growth as before. Mercurochrome was of doubtful benefit here.

Case No. 10. M., female, 24, single, nurse. Had infected finger at base of nail one week previously. On the morning of admission to hospital patient awoke with a chill, nausea and aching in left arm and shoulder accompanied by slight pain in the left axilla; temperature was 103.8, pulse 110 and full. The temperature remained high increasing to 105 with a picture suggesting increasing septicemia. There were no palpable areas in the hand, arm or axilla suggesting a collection of pus. Twenty-five cubic centimeters of a one per cent mercurochrome solution were given intravenously, followed by a chill, nausea and diarrhoea, with no temperature rise above that previously recorded (105). There was, however, in eight hours a drop in temperature to 99 which in a few days rose to 100.2, but soon receded to normal. The clinical picture resembled a blood stream infection but cultures were negative. The sudden drop in temperature and the definite improvement were so marked following the mercurochrome that its beneficial effects can hardly be disputed in this case. Ten days later a small axillary abscess was drained.

Case No. 11. B. M., female, 39, white, single. Following a colectomy for a chronic ulcerative colitis, which had resisted treatment for eight years, peritonitis became evident on the fourth day. Forty-eight hours later her temperature was 105 and pulse 140, leucocytes 4,000, with a definite picture of peritonitis. Thirty cubic centimeters of a one per cent mercurochrome solution were given intravenously, followed by a severe chill but no rise in temperature and no vomiting. There was no improvement in pulse and temperature. Twenty-four hours later a second dose of mercurochrome was given with the same result, followed by a drop in temperature from 103 to 97 in a few hours, with a pulse remaining around 120. Marked weakness and shock were apparent, however, and the patient died twenty-four hours after the second dose of mercurochrome. This patient was unable to increase her leucocytes, a significant factor in all acute infections. Perhaps the mercurochrome was given too late.

Case No. 12. W. J., male, 41, white, farmer. Brought to the hospital in extreme shock with the right arm torn off just below the elbow by a hay mower. There were numerous other cuts about the body. The wound was thoroughly cleansed, with a trimming away of a portion of the tissue, and the bones amputated above the lower margin of the soft tissue. The flap was loosely approximated and the usual antiseptic and aseptic post-operative treatments were given. A few days later a marked infection developed in the stump, and the patient presented a typical septic appearance. After several days of sepsis represented by a rise of temperature to 104, with an increased pulse rate, thirty cubic centimeters of a one per cent solution of mercurochrome were given intravenously, followed by a very mild reaction, i. e., no increase in pulse or temperature, no chills or diarrhoea. A slight improvement was apparent only for about six or seven hours, followed in forty-eight hours by death of the patient. Mercurochrome might have been of benefit the day following the operation.

SEMINAL VESICULITIS*

Arbor D. Munger, B. Sc., M. D., Lincoln, Nebr.

It is the exceptional medical mind at the present time which does not unequivocally accept the teaching that a focal sepsis bears a definite relation to a varied complex of systemic disturbances. So obvious are the teeth, tonsils, sinuses, appendix and gall bladder as offenders in the role of focal sites of infection that we no longer hesitate to institute a radical cleanup whenever such sites are elicited. As a site of focal infection no less important than those above named, just as deadly in its onslaught is a residing infection in the seminal vesicles.

That in the diagnostic search for foci of infection this site is universally overlooked cannot be denied. It is my purpose in presenting this paper to emphasize the fact that bacterial foci, gonococcal and non-specific, lurking often for years, in the seminal vesicles are potent causes for constitutional disorder in the guise of the various arthritides, muscular pains, pains in the hips, thighs, back and abdomen. Also a retinue of psychic disturbances as queer impulses, morbidity, suicidal thoughts, panicky phobias prone to occur on bridges, boats, trains, in churches and theatres, dreadful dreams, loss of thought concentration, indifference to business or occupation, sexual perversion, indeed, sometimes to an extreme degree, not to speak of the multiplicity of urinary complaints these victims present. The time has come for every practitioner to familiarize himself with the embryology and anatomy of the spermatic tract, i. e., vesicle, ampulla of vas and ejaculatory duct.

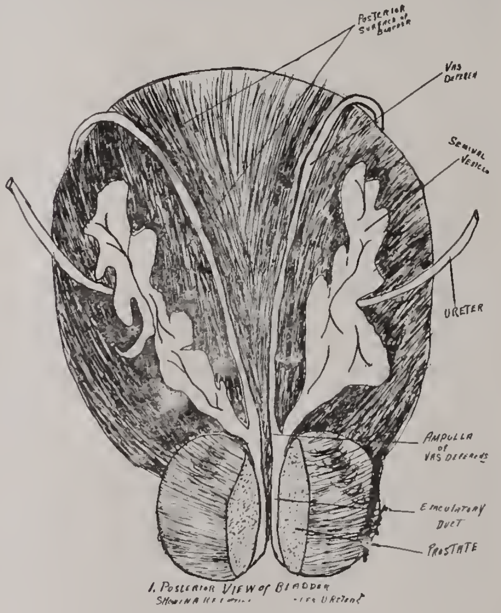
Lowsley (1) describes the seminal vesicles as originating in the thirteenth week of life: "They appear as an evagination, lateralward from each vas deferens, being covered by the same tissue that envelops the latter structure. They grow backward and laterally consisting of a main part which is convoluted and from which numerous convoluted branches grow out as described by Gustaf Pallin."(2)

In adult life the vesicles lie in a three layered fascial hammock described by Lowsley as the intervesicular fascia.

The vesicles, vasa and ampullae are simiiar in structure, each having a mucosa supporting several layers of columnar epithelium and externally two layers of muscle, an inner circular and outer longitudinal. Without, there is a fibrous adventitia which carries vessels, lymphatics and nerves.

The blood supply is rather copious. It is derived from the inferior vesical and middle hemorrhoidal branches of the internal iliac artery. They enter the structure at the upper and outer borders. The nervous mechanism of the vesicles is most complex and delicate. Fibers from the hypogastric plexus penetrating intimately the muscular and mucous coats.

Grossly the vesicles may be described as tortuous tubular structures with many ramifying diverticula lying under the base of the bladder and in front of the rectum in close proximity to the termination of the ureters.



CUT NO. 1

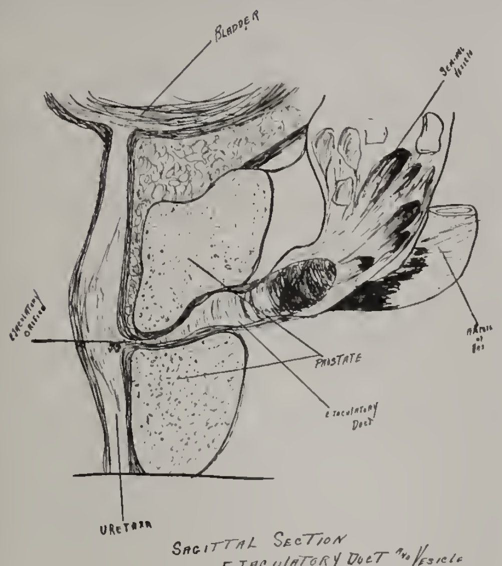
The vesicles lie latterly to the spermatic cords with their lower extremities converging centrally toward the base of the prostate terminating in the ejaculatory ducts which open into the urethra at the site of the verumontanum.

The etiology of seminal vesical infection falls into two distinct classes, i. e. (1) seminal vesiculitis due to invasion by the gonococcus and (2) seminal vesiculitis due to invasion by the various non-specific bacteria.

In view of the high percentage of the male population who have had gonorrhoea, and realizing that 90% at least of these have had a posterior urethral involvement, it must be apparent to every one that, comparatively, there are few men who have not experienced a spermatocystitis.

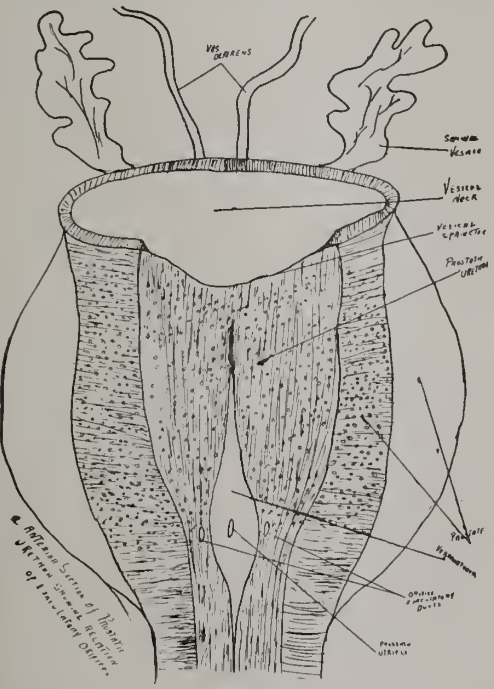
---

*Read before the Lancaster County Medical Society, November 1, 1924.



CUT NO. 2

As a primary invader of the seminal vesicles there is no question but that the gonococcus holds first place among the organisms. In a consideration of all types of infected seminal vesicles there is a past history of gonococcal infection in 90% of the cases. It is not to be taken from this statement, however, that the gonococcus per se remains the offending factor in pure culture for any great period of time. The chronic inflammatory state due to hyperemia, the round celled infiltration, the insufficient drainage and change in the nature of the fluids present establish an excellent culture medium for the growth of the many secondary invaders.



CUT NO. 3

It is of interest to note the array of bacteria obtained by Delzell and Lowsley (3) in a recent study: Staphylococcus viridans and hemolyticus, aureus and albus; streptococcus viridans and hemolyticus, B. coli-communis, M. tetragenus, B. pyocyaneus, B. proteus and the diphtheroid bacillus. From this recital I am convinced that in many patients, tagged with the diagnosis "gonorrheal rheumatism", the gonococcus has ceased its onslaught and abandoned the trenches in favor of a mixed infection, of which one or more of the above mentioned bacteria are the chief offenders.

In that small group of cases wherein no elicitation of a previous Neisserian infection can be obtained—there is the history of or present evidence of an infection in one or more of the commonly sought focal sites. Obviously in this situation the vesicles have been the target for an hematogenous infection from this more remote primary focus.

In these cases it is just as imperative that the seminal vesicles receive attention as it is to relieve the teeth, tonsils or sinuses. Indeed the failure to achieve permanent relief in many of the toxic syndromes is due to this very fact. I have two such cases under my care at the present time.

That the symptomatology of seminal vesiculitis shows such a wide degree of variability is due to the fact that visiculitis in the true sense has no distinct entity, for once existent it ultimately presages a colliculitis, posterior urethritis and trigonitis.

In the review of these cases one is struck with the preponderance of mental and nervous symptoms presented. This group may be conveniently classified as the mental and neuro-sexual. These cases are usually of long standing. Their state, the result of progressive evolution through long absorption of the vesicular toxin and the wear and tear of their genito-urinary irritability.

There is manifest evidence of depression and worry, which may simulate true melancholia. Sexual aberrations usually are present.

Impotence is a frequent complaint, with premature ejaculation a close second in frequency of occurrence. Painful orgasm, painful and incomplete erections, hemospermia and pyospermia are not infrequent of elicitation.

A most lamentable picture is this type of case. Years of effort and enormous sums of money have been spent in the quest for relief. Invariably the statement is volunteered that "of recent years the doctors tell me it's all in my head."

The second group is characterized by the occurrence of arthritic complications and is usually termed the "rheumatic" group. In these cases there may be no subjective symptoms pointing to the vesicles. The patient complains of a chronic painful involvement of one or more joints, bones, muscles or tendons without apparent cause.

The careful physician will look for a focal involvement in the teeth, tonsils or other possible pus foci including the seminal vesicles. Very frequently a careful search in this direction will reveal the surprising information that a definite pus focus of ample proportions is located in one or both of these organs.

In the third group of cases the perineal and testicular symptoms are predominant. Under this heading there is pain in a variable degree ranging from only slight discomfort to sensations of dragging and drawing feeling to fullness and pressure. There is a sense of discomfort to actual burning between the ischial tuberosity and the deep urethra on the affected side. The patient will not infrequently definitely localize this spot with his finger tip—it is not tender to pressure. Many of the urethral symptoms which occur at the close of urination are referred to the perineum. Many of these cases have attacks of recurrent epididymitis and naturally complain of sensitive epididymi, and drawing pains along the cord.

In the fourth or bladder and urinary group, if the anatomical proximity of the bladder to the vesicles is considered, the cause of the bladder symptoms will be readily appreciated. Owing to the relation of the ureters, it is possible in the case of a markedly distended seminal vesicle for the function of the ureter to be seriously interfered with by pressure.

In some cases the mucosa of the bladder overlying the trigonum is hyperemic, edematous and there is in some degree a trigonitis. A case is recalled where a well defined area of inflammation in the trigonal region roughly followed the shape of the underlying engorged vesicle and the diagnosis was quite evident.

A bladder so involved can easily account for such symptoms as irritability of the vesicle neck, suprapubic pressure, vesicle tenesmus and acute retention which are not uncommonly noted. These cases will not infrequently complain of occasionally presenting a few drops of blood at the end of urination. The majority of these cases have a mucopurulent discharge of a resistant character, which is not relieved by the ordinary methods of treatment.

A fifth class comprises those cases wherein the predominating symptoms are abdominal pains. These pains may simulate acute appendicitis, ureteritis, ureteral colic or stone. Dull persistent supra-pubic pain, constant pains in the lower lateral quadrants of the abdomen with a chronic urethral discharge should always suggest vesicle trouble. It is the rare case which does not present one or more abdominal symptoms. I am entirely familiar with a case wherein an exacerbation of vesicular infection promotes gastric distress simulating a pylorospasm.

Lastly there is a group of cases wherein the rectal and anal symptoms take precedence. This type is productive of pains that are referred to the hypogastrium, loins, anus, perineum and sacro-iliac synchondrosis. The sensations of warmth, feeling of fullness and itching about the anus and in the rectum is often complained of and is apt to be prominent in any form of vesiculitis due to the association of the vesicle and prostatic plexus with the sacral and lumbar nerves.

In establishing the diagnosis of a vesicular infection it should be held as axiomatic that in any toxic syndrome the vesicles may be an offending factor.

For some unknown reason the profession seems to have forgotten the fact that there is such a thing as an index finger which can be educated. In the acute type the vesicle may be soft and almost lost in the folds of the rectum, or greatly distended, tense and exquisitely tender. Some cases are of the fibrous or sclerotic type while others are the spongy suppurative type with abscess cavities. In the pan-inflammatory type the prostate and vesicles are matted together in one composite mass of inflammatory tissue, with hardly a vestige of normal landmarks remaining.

The urine voided in two glasses may be clear and sparkling in both glasses or present shreds and sometimes pus in the first glass, while the urine in the second glass is clear. Implicit dependence on this two glass test is apt to be misleading. However, if the urine is voided after massage of the prostate and vesicle it will be clouded with pus and will contain many or few large clumps of vesicular debris possibly mixed with blood. Microscopic examination of the massaged material usually will show the presence of pus cells, gonococci or other bacteria and dead spermatozoa. As a safer criterion to the vesicular contents I resort to a condom speciman of the seminal fluid.

An important point to remember is that in many cases a single examination of the prostatic and vesicle secretion will apparently show it to be non-infected, whereas, repeated examinations will reveal pyogenic micro-organisms. A properly instituted endoscopic examination is a necessary diagnostic adjunct. The changes that are presented here are chiefly on the colliculus.

The colliculus may be normal in size and color showing only an adherent fibrinous exudate spreading out from the orifice of the duct, or areas of granular excrescences scattered over the lateral sulci. It may be deeply congested, enlarged and reddened or appear flattened out and atrophic. While such changes are not definitely pathogomonic, yet they definitely reflect the fact that this structure is being attacked by an infected bath from some source. Pus or infected fluid seen coming from the orifices of the ejaculatory ducts is definitely pathognomonic. These orifices are usually easily catheterized and may be injected. Roentgenray studies of the vesicles as done by Belfield. Young and Waters following injection with an opaque medium are interesting but with out practical value.

The treatment of infections of the seminal vesicles, whether it be surgical or non-surgical, the principle of free drainage is paramount. Direct drainage by incision of the seminal vesicle, vesicle, vesiculotomy was introduced by Fuller of New York.

Vesiculectomy by the perineal route is a radical procedure and should be reserved for those cases wherein all other means of procedure have been exhausted. Smith and Morrissey (4) have recently reported excision of the vesicles in 77 cases. It is too early to state what their end results will be.

These surgical procedures seem, in most cases, out of proportion to the results achieved. In a review of sixty odd cases under my care since March 1919 there was but one case wherein radical procedure was instituted. This was a pyo-vesiculitis in which drainage could not be established through the ejaculatory duct. Vesiculotomy here gave an excellent result.

In the vast majority of cases, the treatment of seminal vesiculitis should consist of daily massage of the vesicles, vigorous dilitation of the deep urethra, local treatment of the verumontaum and catherization of the ejaculatory ducts. Massage of the seminal vesicles is technically difficult and takes time and must be repeated for a long period of time. Properly done this treatment is highly effective in so far as the vesicle is concerned but it is insufficient in so far as the ejaculatory duct is concerned. This structure must be treated directly through the endoscope. Catherization of these canals is necessary in the majority of instances, absolutely indespensible in many. The need of catheterization is due to the fact that these ducts frequently take on the same fibrous alterations which take place in the uretheral canal i. e.—stricture. A strictured duct precludes drainage and must be dilated. I do not agree with Delzell that it is good practice to inject an antiseptic medium directly into the vesicle through the ejaculatory ducts. I never have done so because the procedure appeals to me as placing too great a premium on a mechanically induced epididymitis. In that occasional case, fifteen out of a series of sixty cases, where I find it desirable to lavage the vesicle I resort to a vasotomy, in this manner establishing a through and through channel for irrigation and drainage. It is not a severe ordeal and such intractable cases get well more quickly. The inflammation and irritability of the verumontanum and the deep urethra should be allayed by copious urethro-vesical irrigations and dilitation of the posterior urethra with curved sounds. When irritability is sufficiently reduced direct local treatment to the verumontanum should be begun. This should consist of caustic applications directly to the surface of the verumontanum; of recent date I have been using the fulgurating spark with equally beneficial results.

Under the influence of such procedure the seminal vesicles will ultimately rid themselves of the pathologic products which harass them, the verumontanum will assume its normal aspect; polyposis, oedema, and inflammation of the deep urethra and trigone will be allayed with a concomitant alleviation of any toxic syndrome thereon dependent.

BIBLIOGRAPHY

1. Lowsley, O. S. The Development of the Human Prostrate Gland with Reference to the Development of other Structures at the Neck of the Urinary Bladder. Am. J. Anat. 13:299, July 1912.
2. Pallin-Gustaf. Arch. f. Anat. u. Physiol. 1901.
3. Delzell, R. and Lowsley, O. S. Diagnosis and Treatment of Diseases of the Seminal Vesicles. J. A. M. A. 82:270, Jan. 26, 24.
4. Smith, F. W. and Morrissey, J. H. Infections of the Seminal Vesicles in Relation to Systemic Diseases. J. Urol. 9:537, June 1923.

VINCENT'S ANGINA*

A. A. Conrad, M. D., Crete, Nebr.

The incentive for this paper is the comparatively frequent and recent encounters I have had with Vincent's infection of the mouth in children. The fact that Vincent's infection attacks anything but the throat had hardly entered my head till my microscope made it plain to me that that was what I had to deal with. Those of you who were in France are no doubt acquainted with the trench mouth which was so troublesome during the war and are posted on it; but for those of us who were not over there I have tried to prepare something on the subject to bring it into your range of thought when dealing with sore mouths. The material for this paper has been culled from various books and medical and dental journals and I am not so sure that it will be educating to you. I was surprised, in reading, at the number and variety of complications that can follow an attack of the fusiform bacillus and spirilla of Vincent. While infection of the mouth started my reading I am including the infection of the throat as well.

Vincent's name is really not rightly associated with this condition for though his was the first accurate and complete study of the bacillus and spirillum, variously known as Bernheim's bacillus, Plaut-Vincent bacillus, bacillus fusiformis, bacillus hastilis, spindle shaped bacillus, etc., causing the condition called Plaut-Vincent angina, trench mouth, ulcerative angina, and stomatitis, ulceromembranous angina and stomatitis, angina diptheroides, gangrenous tonsillitis, ulcerative sore throat, septic or putrid sore throat, etc.

While Vincent made the report of his study in 1896, Rauchfus in 1893 associated the bacilli and spirilla with ulceromembranous angina. In 1894 Plaut described the organisms in 5 cases of ulceromembranous sore throat as "Miller's spirochetae and bacilli" giving Miller the credit of having observed, as early as 1883 the association with spirochetes of a bacillus longer than the diphtheria bacillus and pointed on the ends found on the edges of inflamed gums and in an abscess of a submaxillary gland.

Observations upon these organisms and their association with other morbid conditions have accumulated rapidly in recent years, in German, French, American and English literature which speaks for their wide spread and frequent occurrence. They have been found in hospital gangrene, fetid abscesses about the mouth, fetid subpectoral abscesses, fetid pleurisy, mastoiditis, laryngitis, bronchitis, abscesses of the liver, lungs and spleen, cerebral abscesses, appendicitis, gangrenous ulcers of the penis, in syphilitic ulcers of the mouth and throat, in nasal discharges and even in the intestinal contents of a dog affected with dysentery. In the great majority of these conditions the two organisms are found together, but in some instances the bacilli alone were found. Cocci are usually present also, although in some cases the bacilli alone, or, in conjunction with the spirilla, occur in pure culture.

As obtained in smear preparations the

---

*Read before the Seventh Councilor District Medical Society, Crete, Nebr., October 30, 1924.

bacilli appear as long slender rods pointed at the ends and somewhat thicker in the middle. They vary greatly, sometimes the rods are thick with rounded ends, sometimes they are slightly bent or may be S shaped. They are 6 to 12 microns long but longer thread-like forms are occasionally seen. They frequently appear in end to end pairs often forming more or less obtuse angles but may be arranged in rows, clumps or radiating groups. Most observers describe them as non-motile. Ellerman claims the short curved forms are motile spirilla.

The bacilli stain with carbolfuchsin, Loeffler's methylene blue, analine water, gentian violet, polychrome methylene blue, but do not stain with Gram's, although some writers claim prolonged emersion in alcohol is necessary for complete decolorization. Spores have not been found, though vacuoles (light staining areas) have been described. Pure cultures have been obtained, by Ellerman (1904) Weaver and Tunnicliff (1905) as non-motile obligate anaerobes growing best at 36 degrees but not at room temperature. Horse serum agar, ascites agar, dextrose free broth, plain agar, ascites broth and horse serum give growths of the bacillus. These cultures have an offensive odor but no gas is formed.

The spirilla are long and delicate with 3, 6 or 8 turns. They stain lightly and uniformly and are quickly decolorized by Gram's method. They are motile but if exposed to cold quickly lose their motility. They have been grown only in mixed cultures. Weaver and Tunnicliff used human pleuritic exudate and broth containing muscle sugar. The growth was always slight and not influenced by the exclusion of oxygen. Veilon and Zuber and Ellerman with pure cultures of fusiform bacilli caused abscesses in rabbits and guinea pigs. Weaver and Tunnicliff produced abscesses in guinea pigs by intramuscular injections of mixed culture.

The majority of writers seem to believe the fusiform bacilli and spirilla to be different varieties of organisms acting in symbiosis, the virulence of the bacilli being increased by the presence of the spirilla. Numerous observers have noted that the cases of angina in which the bacilli alone are found are of a milder type than those in which both are present. In cases of deep destruction of tissues the spirilla are always present. Some writers (Seifert, Perthes, Soble and Herman) believe the bacilli and spirilla are developmental stages of the same organism, but there is no positive proof of this. Only a few of the writers (Bludorn) are inclined to believe the spirillum is the causal agent basing their views upon Bumpel's and Gerber's successful treatment of the angina with salvarsan, this being taken as evidence of the spirochetal nature of the infection.

It has not yet been proven that the fusiform bacillus is the etiological agent in the conditions in which it is found. The strongest evidence in favor of it is the demonstration in the tissues from cases of noma and ulceromembranous angina of organisms that resemble the cultural forms of the fusiform bacillus. Ellerman has demonstrated the presence of both organisms in the zone separating necrotic and living tissues in a case of ulceromembranous angina. The most recent writers regard the organisms as saprophytes under ordinary conditions, but like the colon bacillus, becoming primarily or secondarily pathogenic under certain conditions.

PREDISPOSING CAUSES

Although the infection may develop in apparently normal persons it is believed that predisposing factors are usually present, such as tobacco, defective teeth, tartar, inflamed gums, oral uncleanliness, alveolar abscesses, scurvy, syphilis, mercurial stomatitis, trauma to the tissues following tonsillectomy or other oral operations, and primary infection with other organisms. The condition is often associated with or follows acute infectious diseases as scarlet fever, diphtheria, measles or whooping cough. An epidemic of Vincent's angina may follow one of diphtheria especially in institutions and hospitals and under such conditions the bacillary angina is apt to run a more severe and malignant course.

CONTAGION

Vincent's angina is regarded as directly and indirectly contagious within narrow limits. The infection may be carried or spread by common eating or drinking utensils, towels, dental instruments, etc. As a rule very close contact is necessary for the spread of the infection.

OCCURRENCE

As said before the fact that reports of

this condition are frequently coming from all parts of the world proves that the infection is quite widely disseminated and a distinct clinical condition to be recognized. Holm in 265 cases of suspected diphtheria examined in 1908, at the laboratory of the Michigan State Board of Health, found the fusiform bacillus present in 73 cases; of the 73 cases 28 had been diagnosed as diphtheria clinically but the diphtheria bacillus was found in only one of the 28 cases. Bludorn examined the throats of 222 patients for the fusiform bacillus and spirillum and found one or both organisms present in all but 27 out of 76 cases of diphtheria in 11 out of 42 cases of scarlet fever, in 13 out of 26 cases of streptococcus sore throat, in 2 out of 4 cases of ulcerative stomatitis, in 21 out of 31 cases of syphilitic sore mouth or throat, and in all but 18 out of 40 healthy persons. In healthy persons it is found close to the teeth, and it is probable that it is responsible for certain ulcerative conditions of the gums. It occurs in both male and female, young and old, and seems more prevalent in the spring than in the fall.

PATHOLOGY

The local lesions vary from a slight local exudative inflammation to an ulceromembranous or even gangrenous type. A gray, yellow, grayish yellow, greenish yellow, creamy or dirty brown membrane appears on the affected part, varying in size from that of a lentil on up. Beneath the membrane is formed the ulcer; from the first the base of ulcer appears as if covered with membrane. The ulcer is rather chancroidal in type with worm eaten base and sharp overhanging edges which may be slightly elevated above the surface. Depth of the ulcer varies greatly from a superficial affair to one-half an inch deep. On removal of the membrane the ulcer bleeds freely and a new membrane may form. Usually the membrane does not spread rapidly like it does in diphtheria, but occasionally it does and may involve uvula, palate, gums, pharynx, larynx and trachea. Sloughing of the soft palate and the uvula has occurred. Very rarely the process may be very destructive, gangrenous or nomalike. An ulcerative stomatitis is often present and the ulcers may appear on the tongue, cheeks or gums. As a rule the ulcers heal slowly and not infrequently become chronic or sub-chronic in character. The submaxillary glands are usually involved and also the lymph glands at the angle of the jaw. Suppuration of the glands seldom occurs.

Complications and sequelae in the form of middle ear disease, mastoiditis, meningitis, cerebral abscess, bronchitis, pneumonia, edema of the glottis, pleuritis, empyema, pericarditis, arthritis, etc., may occur but are relatively rare. In all of these conditions the pus has a characteristic stinking odor, similar to that produced in mixed cultures of the fusiform bacillus.

Microscopically the ulceromembranous lesions show the picture of necrotic inflammation. Fusiform bacilli and spirilla are found in the zone separating necrotic from living tissue.

SYMPTOMS

The symptoms vary as the local lesions vary in severity and extent. So we have the mild and severe cases with nearly every gradation between. There are no characteristic prodromal symptoms. A feeling of dryness or discomfort in the mouth followed by dysphagia and lassitude, restlessness, insomnia, loss of appetite, headache, coated tongue, constipation or occasionally diarrhea, vomiting, pain, in the stomach, epistaxis, chills and fever gradually develop during one to five days when the local lesion is discovered. Fever is usually not higher than 103. A marked fetor of the breath is usually present especially when there is a stomatitis. Some cases show a septic pallor. The average case gives the history of sore throat or mouth with ulceration.

The cases with stomatitis may and usually do show bleeding from the gums. The teeth may become loose. Earache and nasal discharge are not infrequent. In the severe cases the symptoms may be very violent; there is great pain and difficulty in talking and swallowing, the breath is very fetid, the cervical lymph nodes are enlarged and tender, there may be marked gastro-enteritis, high fever and prostration. The picture of noma may develop or the symptoms closely resemble those of malignant diphtheria. In these cases albuminuria is common, purpuric and polymorphous eruption, and tender edematous patches appear on the skin. Appendicitis, empyema, pseudo-rheumatism, arthritis, gastro-enteritis, endocarditis, pneumonia, or peritonitis may develop as complications in septic cases.

While the constitutional symptoms may

be slight or absent the local condition may be more marked than in diphtheria. The more severe cases are likely to occur in weakly children following other acute infections.

A subacute or chronic course of the infection is not infrequent. Such cases may run three weeks or three months or longer without healing of the lesions. These cases are especially dangerous in transmitting infection to others.

PROGNOSIS

The prognosis is usually good. Complications of the severe form are quite infrequent but extention to larynx and trachea is very dangerous, and like noma may cause fatality. The possibility of chronic cases must always be borne in mind.

DIAGNOSIS

The only positive test is culture. A smear from the base of the ulcer will show the fusiform bacillus alone or with the spirillum or other organisms. Culture is necessary to exclude diphtheria and other infections. Many cases of suspected diphtheria are no doubt Vincent's angina, but before assuming that any ulceromembranous infection of the tonsils or mouth is Vincent's angina, diphtheria must be ruled out by culture. Chancroid and syphilis must be excluded by the history, other symptoms, Wassermann test. The Ducree bacillus speaks for chancroid. Lacunar and membranous tonsillitis must not be forgotten.

In the mouth the same bacteriological tests should be made, though the fetid odor on the breath and the ulcerated condition of the gums with the yellowish white or white membranes almost speaks for itself. This membrane may be wiped off with a swab saturated with H^2O^2; under the slough will be found a highly inflamed area, sensitive and painful, which bleeds at the slightest touch.

In the differential diagnosis of the mouth infection one must rule out, pyorrhea, alveolaris, mercurial stomatitis, syphilis, pemphigus, cancrum oris, aphthous stomatitis, diphtheria, tuberculosis, staphylococcus infections, and trauma.

TREATMENT

In the treatment we find a great variety of remedies and no specific. Among these remedies are, neo-salvarsan, used as a local application in 10 per cent solution and also used intravenously, swabbing with 10 per cent chromic acid, or saturated copper sulphate solution. Potassium chlorate used in a saturated solution for swabbing or as the dry powder, Tr. of iodin, enzymol, 10 per cent solution of trichloracetic acid, silver nitrate solution 10 per cent, washes or gargles of potassium permangenate or sodium perborate and so on indefinitely.

Personally I have tried almost the whole gamut of remedies and it seems to me my best results have followed the use of Mercitan liquid, a preparation put out by Caulk. One treatment, a swabbing, gives marked relief from pain and discomfort, the patient can eat and talk much more freely than before the treatment. The first two or three treatments are at daily intervals and as a rule our patient is apparently well. The smear shows a very few organisms after the third treatment but we advise further treatment covering three weeks from date of first treatment increasing the intervals between treatments as our judgment dictates. Its application is no more difficult than any other of the remedies and acts more quickly, removing the slough, contracting the swollen edematous tissues, reducing the inflammation and the tendency to bleed and as far as smears are concerned sterilizing the inflamed areas after 3 or 4 treatments.

CONCLUSIONS

I believe that Vincent's angina, or infection, is more common than we suppose and that the microscope is the shortest cut to a diagnosis. The literature leads us to suppose that it is most common at from 16 to 35 years of age. At least half of my cases have been in children and in the last three months I have had 3 cases under 18 months of age, and no two in the same family. In my opinion the most efficient remedies in the order of effectiveness are Mercitan liquid, neo-salvarsan, and 10 per cent trichloracetic acid.

THE SYNDROME CHANGED

Patient—"Doctor, I've known you so long now that it would be an insult for me to pay your bill, so I've arranged a handsome legacy for you in my will."

Doctor—"You don't mean it—I am overwhelmed—by the way, just let me take a look at the prescription again."

THE KIDNEY OF PREGNANCY*

J. N. Campbell, M. D., Stamford, Nebr.

There are a large number of conditions that present themselves for consideration in a discussion of this subject, and a paper could be written on each one.

Some of these are rather rare, some are common, some are very mild in their effects, and some are of a serious nature.

Some of these conditions such as, acute nephritis, chronic nephritis, floating kidney, tumors of the kidney, pyelo-nephritis, pyelitis, hydronephrosis, renal calculi, and albuminaria, should all properly be considered, but would cover too much ground and consume too much time. So that I am going to confine the discussion to two of the most common conditions of pregnancy, and at the same time the most important. vis: albuminuria, and the resulting condition, eclampsia.

The best way to treat eclampsia, is not to let it happen, and to this end the urine of the pregnant woman should be frequently examined during the latter three or four months of pregnancy at least once a month as precautionary measures.

The prevention of puerperal eclampsia depends upon an adequate supervision of the patient, to the end that albuminuria may be promptly and efficiently treated. Some of the methods employed for this supervision are not always practicable, except for wealthy, or at least well-to-do patients. Thus, laboratory analyses of the urine once or twice a week for three or four months is too costly for most patients, and is quite unnecessary. When the doctor is engaged for the case he should strongly impress upon the patient the necessity of reporting to him during the last three months of pregnancy any state of ill health, especially headache, nervousness, nausea, edema of feet, hands or face, or scanty urine. If these precautions are faithfully observed, no serious case of nephritis will escape discovery.

Whenever the urine is found to be of a very low specific gravity, or to contain albumin, then frequent examinations must be made; the frequency varying according to the severity of the condition from daily to twice a week.

It is not safe to make the intervals longer than half a week if once the kidneys have been involved, as these patients sometimes change for the worse very suddenly.

These examinations of the urine need not be elaborate analyses, on the contrary it is better that they be simple, so that they can be made by the doctor in a few minutes, for then they are likely to be made often. Three things are important to know, and are most essential. The rest are immaterial.

1st. The total amount of urine passed in the twenty-four hours.

2nd. The specific gravity.

3rd. The proportion of albumen present.

The first can be easily ascertained by the patient, by collecting all of the urine in a clean vessel from noon to noon and measuring it in ounces. The second by a urinometer, and the third by the simple heat test with an alcohol lamp.

If a precipitate forms on boiling the upper portion in a test tube, add one or two drops of a 28% solution of acetic acid which will clear up the precipitate if it is phosphates.

If albumen is present the amount should be ascertained which can be easily and quickly done with an Esbach's albuminometer and Esbach's solution. The tube has a graduated scale and makes the quantitative estimation an easy procedure for comparative examination.

The relation between the quantity of urine secreted, its specific gravity, and the amount of albumen present is of great importance. The safety of the patient depends upon her getting rid of her waste products of metabolism.

A low specific gravity indicates a lack of elimination. Still if at the same time the amount of urine is large, the total elimination of solids may be sufficient.

In most cases the urine is of low specific gravity, and scanty in amount.

In a very few cases there is little or no albumin present, but a sense of safety should not be felt on this score, because the amount of albumin is the least important factor.

Too much importance should not be attached to the quantity of albumen, because in some cases convulsions may occur with a small amount present when the specific gravity is low and the output of urine in twenty-four hours less than one pint.

---

*Read at October meeting of Republican Valley and 10th Councilor District Medical Association, held in Hastings, Nebr.

Irrespective of the amount of albumen, if the output of urine can be maintained at three pints and the specific around 1010 the patient is fairly safe.

When a case of albuminuria is found the question of treatment immediately presents itself.

Back over a period of 25 or 30 years a number of different kinds of treatment have been enthusiastically followed.

The one of giving elaterium, croton oil, calomel or any one of a number of drastic cathartics that would produce excessive evacuations in an effort to relieve the system of accumulated toxins. But this method has been largely superseded by other and better methods as the active catharsis produced weakens the patient to such a large extent, loss of flesh ensues, and while elimination is enhanced somewhat, it is not as beneficial as elimination through the proper channels, that of through the kidneys.

Complete deprivation of all liquids was once a favorite method but has been abandoned because it merely controls the dropsy without increasing the eliminative function, upon which success depends.

Skim milk and a strictly non-albumen diet has never been wholly successful because of several reasons.

So many patients do not like milk, and cannot seem to keep up the necessary systemic strength upon an exclusive milk diet.

The patient is not in danger because of too much albumen in her system, but because of an abnormal condition of the renal vessels.

When, under treatment the albumen disappears it is merely the result of increased elimination and a recovery of tone of the renal vessels. In determining the diet of this class of cases the object should be to keep them as well and as comfortably nourished as possible.

A large meat and egg diet is not to be allowed, of course, but a moderate amount, if desired, is a safe and logical proceedure, and the patient's strength is not rapidly depleted.

A varied diet is more conductive to health and strength than a limited one, and the patient who is well nourished is much better fitted for parturition than one who has been deprived of her strength by excessive catharsis and starvation diet.

As long as proper excretion of wastes can be maintained by the following treatment, as little interference as possible should be made with the patient's normal habits.

The digitalis treatment has given the best results in albuminuria of pregnancy of any treatment that I have ever used, and the results have been uniformly favorable in all of the cases where it was used when the condition was discovered before convulsions occured, antepartum.

As soon as a case is found where albumen is present and the patient shows any of the signs or symptoms enumerated above, she should be placed at once upon some preparation of digitalis, preferably the fat free tincture.

This preparation as made by the standard concerns, is uniform in strength and easily administered. Other preparations may be as good, and that would be a matter of personal preference.

Small doses are absolutely useless. It must be given in large doses and closely watched.

The best plan is to begin with ten drops of the fat free tincture, every three hours, increasing the dose by five or ten drops each day until the pulse falls to sixty per minute or even a little lower. The rapidity with which this result is attained depends upon the patient's condition.

If the condition is severe (much dropsy and scanty urine), it should be given sufficiently to produce the physiological signs inside of twenty-four hours.

In giving it in this manner the pulse should be watched closely and taken every two hours.

If the patient's condition is only a moderate one, three or four days should be taken to bring the pulse down to this level, and a three or four hours recording of the pulse rate is sufficient.

As soon as the physiological effect of the digitalis becomes well marked the action of the kidneys becomes more nearly normal. The output of urine rises rapidly, the specific gravity increases, the albumen diminishes, and all of the symptoms rapidly improve.

As a rule this is the only drug needed in the treatment of this condition although acetate of potassium, Basham's mixture, diuretin, etc., can be given with it if so disposed, but they seem to add little or nothing to the good results.

When the pulse comes down to 60 or below it is better to stop the drug until it begins to go up again. Smaller doses will not always stop a further descent, and the cumulative action must always be kept in mind.

In eclampsia we have one of the most serious conditions that can befall the pregnant woman.

It has been the bane of the obstetrician since the dawn of medical history. The suddeness of its advent, and the pitiful picture that the mother presents, the speechless horror of the relatives and the untrained assistants, all contribute to a feeling that the physician has, the wish that he had entered some other business or profession.

The frequency with which eclampsia occurs varies with each investigator. Some writers give it as occurring once in 500 cases, while some claim a frequency as often as 1 in 200.

In my own practice the percentage has been about one in 175. Edgar gives in his practice a series of 1200 cases in which it occurred 7 times, or one in 171 cases.

In eclampsia the methods of treatment have been many and varied. Active catharsis with croton oil or some quick acting drug, rectal administration of chloral or bromides, inhalation of chloroform, hypodermic injections of morphine or pilocarpine, blood-letting, forced delivery, and veratrum viride. All of these measures undoubtedly contain some good, but many of them at the same time are harmful in their effects. A dose of croton oil is all right only for its quick action upon the bowels. Chloral and bromides by rectum if given in sufficiently large doses to be of benefit are so irritating to the rectum that they are usually expelled before absorption can take place.

A single hypodermic of morphine is permissible at first for its sedative effect until other measures can be taken, but its continued administration does harm by stopping the secretions and hindering elimination. Pilocarpine is sometimes valuable, but it is a very dangerous drug, and its effects are not always easily controlled. Chloroform by inhalation is a very valuable procedure for its effect upon the relatives, but almost valueless as far as the patient is concerned. The onlookers think one is doing something, which is a feeling devoutly hoped for, but let us consider a minute. It usually takes at least ten minutes to bring a patient under choloroform narcosis. An eclampic attack usually last only about two or three minutes, and respiration is practically suspended. How then could it be of any benefit if only given during the attack. If one could fortell the onset of the convulsion and give it a sufficient time before the onset, it would undoubtedly control it. But one can not tell when an attack is coming until the patient is in convulsions. It does no harm to give it in this and has a valuable effect as stated above, even if not upon the patient. Blood-letting I have never used. For one reason it is not popular with the ordinary class of people, and it has always seemed to me that the withdrawal of a large amount of blood would lower the patient's vitality and resistance to infection, and constitute a drawback that would outweigh the benefit. Blood-letting lowers blood pressure that is true, which is one of the things we want to accomplish, but I believe it can be done so much easier and almost as quickly by other and simpler methods. For over twenty years I have used the veratrum treatment in eclampsia and the results have been such that I have never felt disposed to change. I depend upon it entirely and so far it has not failed. Success depends so greatly upon the manner in which it is employed that a careful observation of certain strict rules are imperative. There are three main points to be observed.

1. Very large doses.
2. Hypodermic administration only.
3. Recording the pulse every ten minutes.

The first dose should be large enough to bring the patient thoroughly under its influence within one hour, but yet not large enough to produce veratrum poisoning.

I usually begin with ten drops and repeat every one-half or one hour till the pulse drops to 60. I have given as high as twenty drops in one case, but this dose produced extreme emesis with large amounts of gastric mucous and was undoubtedly too large.

A ten drop dose is safe and can be repeated every one-half or one hour until the pulse rate is reduced to 60. Then the dosage can be adjusted and the length of time between doses worked out that will keep the pulse rate around 60. I have never seen a convulsion occur with a pulse rate below 70. Experiment shows that veratrum when given hypodermically reaches its maximum effect in about thirty or thirty-five minutes, consequently it is usually better to allow one hour to elapse before giving the second dose, and the amount of that dose regulated to a certain extent by the rate of the pulse at that time. The physiological effect of veratrum is great depression of the pulse, and the secretion of large amounts of gastric mucous. Be regulated in the size of the dose entirely by the pulse rate. As long as the pulse rate is around 60 suspend its administration. And when the pulse begins to rise give smaller doses every hour until the pulse falls to the desired rate again. After the patient is thoroughly under its control the length of time between doses vary somewhat with different patients, and their degree of susceptibility. The length of time will vary from one to four hours. After the regulation of the dose and the time required between is worked out, no hesitation need be felt about the time necessary to keep it up. Continue the drug as long as the pulse rises when it is suspended whether the patient is conscious or not. After a day or two the patient may express herself as feeling well, but if the pulse goes up keep up the varatrum if it takes two weeks until the pulse stays down without it.

One of the cases in my practice was given from 5 to 10 drops of veratrum, varying from one to six hours for a period of fourteen days. This patient was not unconcious all of the time and the last week of the veratrum treatment felt fine as long as she was under the influence of the drug, and the pulse rate was kept in the 60's. After the first week, due to a natural hesitation to give so much of such a powerful drug, several attempts were made to suspend the administration of it, but up till the 12th day, if it was not given the pulse would gradually rise until within a few hours a convulsion would occur. She never had a convulsion with pulse below 70. The veratrum was given continuously for over fourteen days, and almost two ounces of Lloyd's specific veratrum was used.

The last four or five days the dose was gradually reduced as the pulse became easier to control and the patient made a nice recovery. It is absolutely necessary to have a trained nurse in attendance. Success depends upon the faithful watching of the pulse rate, and promptness of administration of the drug when necessary.

The use of some cathartic to empty the bowels is indicated if it can be retained. The Murphy drip, and the use of a physiological salt solution or Fischer's solution intravenously, by rectum or subcutaneously are very valuable adjuncts to increase elimination as fast as possible.

A few words regarding the physiological and therapeutic action of veratrum would not be amiss at this time.

Taken in moderate doses veratrum viride reduces the pulse rate in a marked degree. This condition is followed by severe nausea and vomiting together with muscular weakness. Taken in a poisonous dose these symptoms are increased in severity, the pulse becomes almost imperceptible, the skin cold and clammy together with vomiting, retching, hiccough, faintness, dizziness, blindness and unconsciousness. These symptoms indicate that the drug is a powerful spinal and cerebral depressant. Although veratrum is a powerful poison, it is so regular and uniform in its action, and so devoid of erratic or unaccountable or uncontrolable influences, that it can be given within the limits of its maximum dosage with safety. It is not rapid or violent in its first effects and is not cumulative. It is quickly eliminated and the effects of single doses are transient. It can be watched even when the doses are large, and stopped before harm results. It is really the safest of our active agents. Its poisonous effects are easily antidoted.

HYPERTONIC SALT-SOLUTIONS IN INCREASED INTRACRANIAL PRESSURE

Cohen points to the pressure reducing effect exerted by the intravenous administration of hypertonic salt-solution on the intercranial pressure. In brain tumors or meningitis this treatment makes the pain disappear or at least alleviates it for a period of 12 hours to 3 days. When administered per os, the solutions have a less satisfactory effect. Also in cerebral hernia good results are seen.

The infusions can also be recommended prior to a brain operation, in order to reduce the distension of the brain on the opening of the cranial cavity. They have no effect in headache or extra-cranial origin. In the use of hypotonic infusions the intracranial blood-pressure is increased; that is why the author uses the infusion of such solutions in headache following lumbar puncture. (Paris Med.).

PHYSIOTHERAPY IN PULMONARY TUBERCULOSIS*

Miles J. Breuer, M. A., M. D., F. A. C. P., Lincoln, Nebraska.

This discussion is an effort to state some of the general principles involved in the treatment of pulmonary tuberculosis by physical agents. It is quite impossible to lay down detailed rules for procedure. There are no two cases of tuberculosis alike; and physiotherapy is a field in which technic varies with the individual operator and the particular patient. However, the man who thoroughly understands the general principles can easily work out the details for the individual case.

This cannot be a general discussion of the therapy of tuberculosis. Because nothing is said about other means of treatment than physiotherapy, I do not wish to be understood as claiming that any case can be treated by physiotherapy alone. It is taken for granted that the reader knows and understands the modern routine treatment of tuberculosis. Furthermore, it must be understood that in no one case can all the methods mentioned be used at once. The selection will depend on the indications, on the operator's equipment, and on common sense.

First of all, it is necessary to declare emphatically that physiotherapy includes no method that is a "specific" for tuberculosis. In order that a method or a drug be a specific against a given disease, it is necessary that it fulfill one of two requirements. It must pick out the causative organism of the disease and destroy it without harming the surrounding tissue; in this sense, quinine is a specific for malaria. Or, it must neutralize the pathogenic products of the organism; in which sense diphtheria antitoxin is a specific. In tuberculosis, the condition of the patient's resistance or immunity has just as much influence in determining the existence of the disease, as has the presence of the specific organism. Everyone is constantly coming in contact with enough tubercle bacilli to set up a clinical tuberculosis, providing his body furnishes the proper opportunities for the development of the organism. The reason that all of us do not acquire clinical tuberculosis is not the lack of tubercle bacilli, but the sufficiency of our physical resistance to them. You may destroy the organisms present in a clinical case if you wish; but unless you build up the patient's resistance by the very methods that are today used in the treatment of tuberculosis, he will be promptly re-infected. For these reasons, we are justified in being skeptical whether there ever will be a specific of any kind against tuberculosis.

In the application of any therapeutic method, our only safety lies in an understanding of the etiology and pathology of the disease, and of the effects of our theraupeutic measures upon this pathology and etiology. As it is impossible to go into the details of the etiology and pathology of tuberculosis in this paper, this subject should be thoroughly reviewed in a modern text-book, in connection with these remarks, in order to get their full import.

The first significant fact in the etiology has already been mentioned; the only person who will acquire tuberculosis under ordinary conditions of living, is one whose general physical condition is lowered sufficiently to permit the bacillus to gain a foothold in the lungs. Until the resistance or immunity is built up sufficiently to overcome the infection, no improvement can take place; and when the resistance is built up to this extent, nothing else is necessary for overcoming the infection. Therefore, the first therapeutic indication is to build up the patient's resistance. To this end, physiotherapy provides at least three powerful agents: The air-cooled quartz light used over the entire body over a long enough period of time to cause marked pigmentation of the skin; the infrared light, which is Nature's great stimulant and supporter of metabolism; and hydrotherapy, consisting of cold showers and plunges.

The second pathological consideration is, that the portion of the lungs that is picked out by tuberculosis, is that portion that normally has the least movement, the least ventilation, and the least circulation of blood and lymph—the right apex. The tubercle bacillus can only gain a foothold in a stagnant corner where the vitality is low. To drive him out, we must restore the local vitality, and bring back the circulation of blood, lymph, and air. In filling this indication by means of physiotherapy, we must consider the extremely chronic course of the disease. Tuberculosis is the chronic disease par excellence. The bacillus grows slowly; where you can raise a rich culture of another organism over night, the tubercle bacillus requires three months to produce a visible growth; where a lesion due to another organism will develop and heal within days or weeks, tuberculous require months and years to develop. From the time that the lesion in the apex begins as a mere microscopic speck until the time when it is developed so plainly that you can diagnose it across the street, years elapse during which there is pathology present, which can be diagnosed by the man who knows how.

---

*Read at the Third Annual Physiotherapeutic Convention, Chicago, October 22, 1924.

Here is where the physiotherapist can get in his effective work. If he can recognize the pulmonary lesion early, when it consists of an area infiltration with lymph and small, round cells, he can do wonders with it, because he has very powerful means at his disposal for handling it. The diagnosis of tuberculosis at this stage has been vastly refined and perfected during late years.

For increasing the circulation of blood in this area, diathermy stands out as the main method. A fresh, active, rapidly moving supply of blood is the only real "specific" for tuberculosis; and this can be secured with diathermy, which dilates the capillaries in the particular spot that is being treated, and nowhere else. The high degree of heat produced is unfavorable to the existence of the tubercle bacillus, and is very favorable to the biochemical processes that the body undertakes in order to repel the invaders. We are producing locally the high temperature, which Nature in her efforts to fight the infection, is compelled to produce in the whole body. A close second of diathermy is the infra-red light, whose effects are very similar. The effects of galvanic and sinusoidal currents are less widely known, but there is much evidence to support the idea that they can stimulate constructive metabolism. The surging sinusoidal wave can certainly stimulate the movements of the affected portion, and promote blood, lymph, and air circulation. Mechanical vibration, with the proper technic, by stimulating nerve cell bodies, can do a great deal in the same direction.

However, if the disease has been permitted to reach a more advanced stage, the story is very different. The infiltrated area has become so large that its center cannot be kept alive, and breaks down. There is necrosis, with destruction of lung tissues; there is a very large mass of active bacilli and of dead protein material and accumulated toxic products of bacterial action. If we begin stirring this about, and sending increased amounts of blood through it, we produce an extensive increase in the absorption of toxic materials and flood the body with them. Lack of caution in the treatment of advanced cases with physical means often makes them worse, and permanently alters the prognosis. With the increased metabolism brought about by heat and extra circulation, the first thing that happens will be more tissue destruction; and if a blood-vessel happens to lie in the path of this, the result may be a serious hemorrhage; though these are rarely fatal. In an advanced case, while the indications are much the same, they must be carried out with extreme caution. A severely diseased part needs rest rather than exercise or movement, and sedative rather than stimulant measures. The increase nutrition provided by diathermy and infra-red light is just as valuable here, but must be applied very gradually and carefully.

The above is a brief statement of the general principles underlying the treatment by physical methods of the primary pathology in pulmonary tuberculosis. In addition, it is necessary to consider secondary and associated pathology. Among the latter, the most important is the restriction of abdominal movement, with its tremendous train of consequences. Just as the abdomen is rigid over a peritonitis, or the muscles are rigid about an inflamed joint, so there is a spasm of the muscles whose nerve supply comes from the spinal segments which receive the afferent impulses from the lungs. These are the muscles of the shoulder-girdle, the diaphragm, and the muscles of the abdominal wall. The maintenance of the abdominal circulation depends on the mechanical movements of the contents caused by the action of the diaphragm and the abdominal wall. When this movement is restricted, the resulting vascular stasis affects practically every organ in the abdomen. That is why the tuberculous patient is such a terrible bunch of symptoms; that is why he doesn't eat, and is constipated, and has low blood pressure and poor elimination through bowels and kidneys, and tympanites and hemorrhoids, and abdominal or epigastric pains, with the addition of pelvic symptoms in women.

For the relief of the underlying condition, we have the sinusoidal wave to supply movement to the abdominal contents and tone to its muscles, for which the respiratory rate is appropriate; and for the relief of the intestinal atony, the intestinal rate is better suited. To assist in the elimination of toxins, autocondensation, preceded by copious draughts of water; hydrotherapy, to open the pores and stimulate peripheral circulation. For stimulating a rise of blood pressure, high-frequency sparks or vibration along the spine and over the solar plexus are effective, and will contribute markedly to the patient's feeling of well-being.

Sinus affections are frequently associated with pulmonary tuberculosis. Their treatment can also derive material aid from physiotherapy, but is of a specialized nature that is out of place in this discussion. The same may be said of hemorrhoids.

In this disease, as in many others, the necessity of treating symptoms frequently arises. The most frequent of these is pain, usually in the chest or back. Vibration, high-frequency sparks, high-frequency discharge, radiant heat and light, negative galvanism, diathermy, are all useful, on the principle of counter-irritation. No rule can be set down as to which is most applicable in a given case. The dry reflex cough is also troublesome, and will in most cases yield to the above measures, generally on the principle of counter-irritation. Headache, if toxic, calls for elimination by autocondensation and deep radiant heat and light; tympanites will yield to the sinusoidal wave and to vibration.

The above discussion covers the salient points of the subject from the aspect of the treatment of the pathologic and symtomatic indications. To get a view of it from another angle, let us review it from the standpoint of the usual routine of treatment as practice in pulmonary treatment today. The therapeutic requirements may be classified as follows:

Rest
Food
Fresh air and sunlight
Removal of excess load
Stimulation
Elimination
Psychotherapy

In each of these, physiotherapy may render assistance in difficult situations, and yield results that are either more difficult or not possible at all by other methods. Sometimes it is difficult to secure actual rest, even though the patient lies in bed, because of nervous restlessness. By means of autocondensation, these patients can be relaxed and quieted throughout the entire body, and often put to sleep. When it is not possible to secure the desired standard of fresh air, the ozone-generator will be found to be a fair substitute; air that has been acted upon by electric sparks contains oxygen in an ionized condition, which acts as a stimulant to metabolism, promotes oxidation of infectious and necrotic material, and combines more readily with hemoglobin than molecular oxygen. When sufficient sunlight is not available, the ultraviolet light will tan the skin quite as thoroughly as natural sunlight, and furnish precisely the same stimulation to the metabolism. In the matter of food, the effort is made to have the food contain sufficient calcium, as that is indispensable to healing in chronic inflammatory lesions; in case there is insufficient absorption and utilization of calcium, the ultraviolet light specifically promotes this function. In view of the fact that most tuberculous patients are deficient in hemoglobin, exactly the same thing can be said of the iron metabolism as was said about calcium metabolism.

By "removal of excess load" we mean the elimination of foci of infection, sources of irritation, and any causes that result in a strain or burden being placed on the patient's physiology. The patient may have an infected tooth, fallen arches, an error of refraction, or a hernia, of which any one alone would be insufficient to impair his general health, but which furnishes sufficient handicap to drag down his physical condition in the presence of the tuberculosis, and hinders him from gaining in weight and increasing in immunity. I have observed, for instance, many cases in which there was a failure to recognize the tuberculous condition because of its early stage of development; but a bad pair of tonsils was found to explain the patient's ill health, and removed; and the resulting improvement assumed to be a proof of the diagnosis, when in fact all that was done was to remove the drag constituted by the tonsils, giving the body an opportunity to work out is own salvation; just as a balloon leaps skyward when a sandbag is thrown overboard. In many cases of this sort, where surgery is indicated, of which tonsils are an excellent example, and yet the patient is a poor surgical risk, physiotherapeutic methods will afford sufficient relief to give the necessary impulse toward improvement.

Under the caption of "stimulation" we include measures intended to produce an increase in the intensity of physiological processes, so that an approximation of normal sensations results. Thus, if we raise the patient's blood-pressure by high-frequency sparks, he "feels better" and that is half the battle in actually making him better; the same result can be obtained by vibration or by hydrotherapy. When he feels better, he will eat; he will be cheerful, he will co-operate with the physician and nurse; the constructive metabolism will be more active. Elimination may be directly stimulated, first by stimulating intestinal action and circulation by the sinusoidal wave current; and second, by increasing the volume of fluid passed through the skin and kidneys, by means of autocondensation preceded by ingestion of large amounts of water.

By psychotherapy, we mean nothing more nor less than the treatment of the patient himself, instead of the disease as a pathological specimen. Its methods make use of all the material aids that therapeutics is heir to. It constitutes no small portion of any method of treating tuberculosis, and cannot be left out of this paper. In this respect, one of the chief values of physiotherapy is that it presents to the untrained eye, the external evidence of something being actually done for the patient. The successful obstetrician who knows very well that there is nothing that will do any good except to wait quietly for several hours, realizes the value of putting up an appearance of activity, and giving the attendants something to do. The old routine treatment of tuberculosis looks to the layman too much like doing nothing; and there is no detrimental factor so potent in delaying recovery as discouragement. Even admitting that physiotherapy accomplishes little that is fundamentally different in a material way from the old methods (though I am by no means ready to admit that), still, the hope with which the patient becomes filled when he sees that something is being done for him and with him, is in many cases the deciding factor which swings a dubious prognosis from the dark side to the bright.

TREATMENT OF ACUTE SUPPURATIVE OTITIS MEDIA*

H. B. Lemere, M.D., Omaha, Neb.

The middle ear has unresisting walls except only the external wall—the drum membrane. In inflammations the whole pressure of the increasing contents caused by the pouring out of serum or the formation of gas is thrown on this elastic membrane. The nerve supply which is exceedingly rich, renders the membrana tympani very sensitive to the increasing pressure. It is shut off from light and is of uniform temperature and forms an ideal incubator for those infections which find their way there by the blood stream or by way of the eustachian tube.

In suppuration of the ear there are two factors of great importance—danger to life and danger to one of our most valuable senses—that of hearing. Helen Keller when asked which sense she would value most—seeing or hearing—said she longed for hearing more than sight. A blind person generally looks and is happy — a deaf person, especially if improperly trained to depend only on deaf people for social intercourse, are suspicious and unhappy. The danger to life lies in the important structures surrounding and in close relationship to the ear and the mastoid, the brain and the sigmoid sinus.

I do not wish to enumerate the symptoms of middle ear suppuration but I do wish to call attention to the importance of an early ocular inspection of the drum membrane. We may see here all the pathology which takes place. The commencement, in which there is an injection of the membrane, then the fiery red of more advanced inflammation, then the swelling of the membrane and perhaps the formation of blebs and blisters, and finally, the accumulation of serum in the middle ear and bulging of the membrane.

The inner lining of the membrana tympani is the lining of the middle ear and the pathology shown on inspection of the drum is the pathology of the middle ear.

---

*Read before the meeting of the Fifth Councilor District Medical Society, Fremont, Nov. 18, 1924.

With a suppurative process present a free incision of the drum membrane will relieve the intense pain from the tension on the drum. It will provide drainage and prevent the pressure from forcing the infected material along the connecting passage into the mastoid antrum. This paracentesis done early may save the hearing, weeks of sickness or even the life of the patient. For local anesthesia the following prescription for instillation has been found generally effective: Cocain (flakes), Menthol (crystals), Phenol 95% in equal parts, the phenol dissolving the cocain and the menthol.

In infants, particularly where the several portions of the temporal bone are not firmly united, pus under pressure in the middle ear may find its way to the brain. It has occurred in the experience of all of us that a child may toss and cry in pain for hours without, however, indicating in any way that its pain is located in the ear and then when it has baffled skillful diagnosis the ear breaks and runs and the pain and temperature cease.

In a child any rise of temperature and restlessness that is not otherwise accounted for should call for an ear inspection. In any infant, if the membrana tympani does not show signs of pressure, a depleting cathartic may so reduce the exudation of serum that the process may subside. This is also aided by the patency and shortness of the eustachian tube in children compared with the adult and the danger of mastoid involvement is not so great where the only mastoid cell is a small cavity which later becomes the mastoid antrum. Castor oil is used particularly as it is the experience of many aurists that other cathartics do not obtain the same results.

Do hot instillations aid? I think they do and though 5% phenol in glycerine is popular on account of its antiseptic action, my experience with equal parts of laudanum and sweet oil as an analgesic has been more happy.

After the discharge is established by paracentesis or rupture it is better to simply change the cotton or to irrigate or to put in drainage wicks? While the discharge is only serous, I only advise changing the cotton in the ear, but when it becomes thick and profuse I wash out frequently and if it is thick and inclined to cake around the ear drum I insert moist gauze wicks for drainage. If the condition becomes subacute the use of washing or gauze drainage is supplemented by the instillation of alcohol drops.

Should tonsils and adenoids be removed while the ear continues to discharge? At a discussion before a national society last year, the general opinion seemed to be that the removal of the tonsils and adenoids during an attack of acute suppurative otitis media often prevented mastoiditis. My own opinion is that if a suppuration lasts unduly long without pointing directly to mastoid the removal of tonsils and adenoids may prevent the development of a chronic discharge or a mastoiditis. This is more conservative than the procedures championed by the essayists, but I believe it is sound.

Is mastoid involvement present in severe ear infections from their inception? Does mastoiditis recover without operation? What are the indications during the course of an acute suppurative otitis media for opening the mastoid?

In most severe fulminating cases of otitis media not only the cavity of the middle ear but also the adjoining cavity of the mastoid is involved. As we know many of these cases go on to recovery without breaking down of the bone. Our indications for operative interference are controlled by two aims. First—to prevent a chronic middle ear suppuration and second—to save life.

If an ear properly cleansed and drained does not stop discharging in three weeks it must be looked upon as a possible infection of the mastoid that is draining through the middle ear and which it may be necessary to drain by a mastoid operation in order to prevent a chronic discharging ear.

If there are the classic symptoms of mastoiditis—pain, tenderness, swelling over the mastoid or of the posteroir superior canal wall, temperature, x-ray cloudiness, increased white cell count, continuing discharge, pain and wakefulness at night, we must consider whether the safety to the life of the patient does not demand exenteration of the mastoid.

A thorough evacuation of the mastoid cells, when there are no complications, offers an almost 100% chance of recovery, both in healing and suppuration and in restoring the hearing. The percentage is greatly lessened, however, when the suppuration has been allowed to get beyond the mastoid into the cranial cavity or to attack the upward extention of the jugular, the sigmoid sinus.

So that surgically, an early paracentesis often saves a mastoid and a mastoid done in time prevents a meningitis, brain abscess, or general septicemia or pyemia. In treatment, general cleanliness and general medical care has much to do with the clearing up of an acute suppurating ear, which otherwise might become chronic.

THE TREATMENT OF DIABETES MELLITUS FROM THE STANDPOINT OF THE GENERAL PRACTITIONER*

P. A. Sundbury, M. D., Holdrege, Nebraska

It was suggested by your program committee that I present something on the subject of diabetes mellitus. This subject has been very much in the limelight of late and it might be looked upon as rather presumptuous for a man in general practice and a limited experience in the treatment of diabetes to talk upon this theme.

While this may be so, yet the treatment of diabetes is rather hazy to many of us. For myself, I know this, that "to play the diabetes game" it requires character and stamina, both on the part of the doctor and the patient, even more so than in the game of tuberculosis, especially is this true regarding the young diabetic.

Joslin states: "There are entirely too many diabetic patients in the country. Statistics for the last 30 years show so great an increase, that, unless this were in part explained by a better recognition of the disease, the outlook for the future would be startling. In 1900 the death rate from diabetes in the registration area of the U. S. was 10 per hundred thousand and in 1920, 16 per hundred thousand. There are probably one million diabetics in the U. S. today. Therefore, it is proper at the present time to devote attention not alone to treatment, but still more to prevention."

The only way in which an early diagnosis of diabetes will ever be made is to search for it. Prevention implies a knowledge of the predisposing agency. The overweight person is always a potential diabetic. In addition to obesity and the associated conditions under which overweight is frequently found, there are other symptoms which must lead us to be on the outlook for diabetes mellitus. These can only be mentioned. A patient presenting himself with any of the following symptoms or conditions should be thoroughly studied: Excessive thirst, frequent urination, weakness, loss of weight, arterio-sclerosis, hyperthyroidosis, nephritis, pregnancy, diabetes and goitre in ancestry, and those cases in which even a doubtful trace of reduction takes place in his urine.

The real headway against the ravages of diabetes begins with its prevention, but when we find the patient already suffering from the disease, what then? From the very fact that the man in general practice should be the first to discover the disease and the one upon whom it will ultimately fall to care for and supervise the patient, he should also be able to initiate the patient into the new life that the patient must lead. But this requires much time, tact, patience and perseverance on the part of the doctor and he should also be able to do blood chemistry in order to serve the best interests of his patient. I, therefore, think that, if the doctor has not the necessary time at his disposal to properly find out the patient's tolerance for food, and properly train the patient to become his own nurse, dietitian, doctor's assistant and chemist, the patient should, by all means, be sent to a diabetic hospital and a diabetic specialist for training.

The hospitalized patient is subject to a degree of control which could not obtain in private practice. Hence, there are special problems encountered in private practice which may be summed up as follows: Less direct control of diet, and greater difficulty in carrying out of diet and other forms of treatment owing to economic, domestic and other circumstances in the patient's life. Less frequent contact with the patient.

It is evident, therefore, that to meet these problems, the effort should be made to so simplify the treatment that it will be less difficult for the patient to carry out and to educate him and train and modify his mental attitude.

In all diseases requiring prolonged and constant dietary restriction the patient's mental attitude toward his condition and his diet is likely to be the determining factor as regards success in treatment. In other words, the physician must, like a successful merchant, sell his proposition to the patient. To this end he must study the patient's character and emotional reaction. Much can be done at the first visit by a concise explanation of the cause and nature of the disease and explaining the absolute dependance of prognosis on dietary control. The patient who understands these things clearly is then ready for the next step, an experimental period of complete restriction and can be told that he must submit to a week of rigid dietary restriction.

---

*Read at October meeting of Republican Valley and 10th Councilor District Ass'n held at Hastings.

As a matter of fact, the diet prescribed should, or nearly always should be, a maintainance diet. On such a diet the expected hunger pains and weakness fail to materialize and he will be pleased on finding that the week of most severe restriction has meant no real discomfort, especially if he finds that this restriction has also made him sugar-free. Such an outcome of the first week's treatment smoothes the way for all that follows. When it does not occur the failure is to be attributed to one of three circumstances: A severe grade of diabetes, unintentional error, or imperfect understanding of the dietary directions, or a resistive patient with strong convictions about the impossibility of getting along without certain foods. In the first instance, more stringent restriction or the use of insulin is indicated, in the others further explanation should set things right.

The importance of a maintainance diet is not always appreciated, but it is obvious that a patient can not indefinitely be continued on an undernutritious diet.

The difficulty in overcoming glycosuria on a maintainance diet in the past was, in a measure, due to insufficient knowledge of the behavior of protein and largely to fear of fat producing acidosis, and, as a consequence, endeavoring to furnish the necessary calories with protein.

The workers in this field, Newbergh and March, Woodyatt, Shaffer, Joslin, and others have shown that high fat feeding is well borne, provided the protein is kept to the minimum required for nitrogen equilibrium.

Calculation of the diet. Protein: If urine is sugar free, the daily allowance should be about one gram for each kilogram of body weight. In severe cases the protein may have to be reduced to 0.5 or 0.6 gram per kilogram of body weight.

Carbohydrate: The amount will depend upon the tolerance.

Fat should be supplied in amount sufficient to make up a maintainance diet.

A maintainance diet would mean one in which the patient was supplied 30 calories per kilogram of body-weight.

If urine is sugar free, fat can be used in twice the amount of carbohydrate, and if the protein is reduced to 0.6 gram per kilogram of body-weight, the fat can be given four and probably five times the amount of the carbohydrate with safety.

If glycosuria continues on a maintainance diet, the patient's tolerance should be estimated and it should then be decided whether to further reduce the protein and carbohydrate or start insulin treatment.

Insulin: Only a few words about insulin as so much has been written about it; but it is one of the great medical therapeutic discoveries of our time. As far as at present known it is not a cure for diabetes, but its use is substitution therapy. It is a two-edged sword and very sharp and it must be handled carefully.

By its proper use, death from diabetic coma and acidosis should be prevented. It can minimize the risks of surgical operations on diabetic subjects and increase the bodily resistance when other complications threaten. It makes possible freedom from glycosuria and good mental and physical vigor for patients with severe diabetes.

The haphazard administration of insulin, without previous determination of carbohydrate tolerance, is dangerous and worse than useless.

This most valuable adjuvant has already established a very firm place for itself, but it does not permit carelessness in diet, but rather still more strongly emphasizes the necessity for more rigid dietary control.

To successfully treat diabetes, the patient must learn how to calculate the amounts of the different foods that go to make up his allowance as prescribed and estimated by his medical attendant. To this end he should know the caloric values as well as the protein, carbohydrate and fat contents of the common food substances that enter into a diabetic diet and he should be provided with scales to enable him to properly weigh out his food.

He should be taught how to examine his urine for sugar, and, if sugar shows, to examine for acetone and diacetic acid. He should be taught to be on the lookout for the premonitory symptoms of acidosis as well as hypoglycemia, and be taught what to do under such circumstances.

He should be taught proper hygiene of teeth and skin.

It should be impressed upon him that he must do his utmost to avoid infections and contaminations of all kinds.

He should be provided with a good primer for diabetic patients and also a notebook in which to record his calculations of his diet.

He should make periodic calls at the doctor's office and at such times bring a sample of a mixed 24-hour urine and should have measured and recorded the total amount of the 24-hour urine.

For guidance, there are sample diet lists in the primers for diabetic patients; also, the different Metabolic Clinics have worked out basic diet lists, which may be procured.

The diabetic patient, like the tuberculous patient is apt to wander, hearing of new cures and new foods; it should, therefore, be impressed upon him that, if he is doing well it is often fatal to change.

I have endeavored, in a crude way, to present the viewpoint of a general practitioner on the treatment of diabetes mellitus and I have endeavored to show, that the general practitioner who understands the treatment of diabetes must especially prepare himself, and have patience and perseverance, if he is going to prolong the patient's life and serve the best interests of his patient.

REPORT OF TWO UNIQUE CASES*

A. C. Stokes, M. D., Omaha

Case No. 1, Miss F. Was called in the evening about four o'clock to see a girl 18 years, who had been well up to one o'clock of that day. The girl was taken with a sudden severe pain in her left ankle. She was removed to her home from work in an automobile and when I saw her about three hours after the attack, her left ankle was swollen considerably, there was extreme local tenderness just above the inner malleolus and she was suffering excruciating pain. Her temperature was 102.5. She had some slight sore throat; the throat and pharynx was congested but no membrane was seen. On the ground of the sudden onset and the localized point of tenderness and pain, we made a diagnosis of acute osteomyelitis of the lower end of the tibia, and in view of recent teachings and studies on this subject the patient was removed at once to the hospital, where a more careful examination was made, a blood count taken which was 19,800. A careful resume of the symptoms gave us the following: 1. Sudden onset. 2. Severe Pain. 3. Local point of tenderness. 4. Temperature 102.5. 5. Leucocyte count about 20,000. 6. Slight redness and soreness in the throat. With these symptoms in view we decided to operate at once. Making the incision down through the soft parts to the periosteum we found a great deal of exudate in the periarticular tissue. We then made drill holes into the cancellous tissue near the epiphyseal line, but found no pus. We then removed a triangular portion of bone with the chisel making communication between the epiphyseal area and the wound. We found no pus at all in the bone or along the epiphysis. Cultures were taken but they were negative.

The girl was returned to her bed and recovered rapidly with rest and proper care. In view of the bad sore throat we asked Dr. Banister to remove her tonsils which he did. Following this operation she recovered normally and left the hospital in about ten days. The wound in the leg was entirely healed, the ankle was not swollen and the patient seemed entirely recovered. After returning home however, she had a number of other slight periarticular inflammatory attacks, one in the right ankle, one in the right elbow and one in the right wrist. It was three or four weeks before she entirely recovered and was able to work. At this writing she is well and working every day.

In view of the retrospective examination of this case and its symptomatology and operative findings we are inclined to think that our diagnosis was wrong. Instead of the case being one of acute osteomyelitis, it was probably a periarticular inflammatory process. My reasons for making this statement are: First, following the operation there was a metastatic multiple arthritis; second, there was no pus found in the bone at the time of the operation; and third, acute osteomyelitis of the hemorrhagic type is usually secondary upon some other inflammatory process than that of the tonsils, while periarthritis is more frequently secondary upon tonsillar infection. A retrospect examination of the symptoms at the time of the first examination is valuable. There were several things wanting in this case to make a diagnosis of acute osteomyeltis. First, the temperature was not high enough; in osteomyelitis the temperature is always from 103 to 104½. Second, the tonsillar infection should have indicated to us at the time of the examination that the probabilities were against osteomyelitis. Third, the blood count which was only 20,000 was not sufficiently high to indicate acute osteomyelitis. In these cases, even in the beginning, the blood count is very high. Knowing all of these things in advance and yet being confronted with the actual case, I was led astray on the two points of pain and tenderness.

I report this case to this staff for two reasons; first, to show how easy it is even though one has the exact symptoms of a disease in mind to go wrong. Second, following out suggestions which have been made abroad, the rapid recovery of this particular inflammation following opening would bear out the contention that incisions into this periarticular area would be justifiable in a great many cases for purposes of drainage. This point was emphasized at the meeting by Dr. Shrock.

---

*Presented at a Staff Meeting, at the Wise Memorial Hospital, Omaha, Nebraska, June 6, 1924.

Case No. 2, Mrs. A. I wish to pass the specimen around as an abnormal specimen. This woman was referred to me on account of a subacute exacerbation of an old chronic pelvic inflammation, probably G. C. in origin. Opening the abdomen we found a large inflamed tube and ovary on one side with a somewhat enlarged and inflammatory uterus. Going to the other side we found a perfectly smooth uterus. There was entire absence of both left tube and ovary. We removed the uterus and right ovary and tube and you have before you the specimen removed. See illustration.

CASE NO. 2

NECROPSY REPORT—FROM THE UNIVERSITY HOSPITAL, OMAHA

A-80-24, Nov. 15, 1924; 8:00 P. M., E. C. Carter, age 47, male, negro.

Clinical diagnosis: Carcinoma head of pancreas.

Pathological Diagnosis: Carcinomatosis of lungs and abdomen secondary to head of pancreas.

Staff Physician: Dr. E. L. Bridges. Pathologist: Dr. J. Jay Keegan (Dr. Reed).

History

In January 1924 the patient was diagnosed a diabetic. Shortly afterward he entered the University Hospital for diagnosis and treatment. He was treated here for a severe case of diabetes, which cleared up and remained so without the continued use of insulin. After leaving the hospital he paid no attention to his diet and in August 1924 he became weak, developed a shortness of breath and his abdomen, scrotum, ankles and feet became edematous and swollen. He entered the hospital again Oct. 18, with the above complaints.

Physical examination showed a poorly nourished negro of stated age. His chest wall was thin, expansion fair and lungs resonant throughout. The abdomen was markedly distended and had a firm doughy feel on palpation. There was a shifting dullness in the flanks. Scrotum edematous and ankles slightly edematous. On entrance he weighed 106 lbs. Urine 5% sugar. Blood sugar 250 mgm. His blood sugar gradually dropped to 90 after having had no insulin for a week. He gradually lost strength and weight. Blood Wassermann 2+. An x-ray of the chest showed smooth rounded nodules throughout the lungs which were diagnosed as a secondary malignancy. 1500 cc. of straw colored fluid specific gravity 1020 was removed by a peritoneal paracentesis. Cell count 2—95% lymphocytes. Later similar amounts were withdrawn of the same character. He was operated Nov. 2, to give relief to the abdominal pain and distention and for diagnostic purposes. Five liters of a cloudy straw-colored fluid was withdrawn. The intestines had a fiery red color, walls thickened and contained numerous small grayish tubercles. The omentum was not found. At the lower edge of the transverse colon a mass of irregular hard nodules was found, a nodule removed and examined microscopically and showed subacute and chronic inflammation, no evidence of tuberculosis, however, two areas showed nests of large cells of epithelial character suggestive of carcinoma. The operation gave only temporary relief. The patient died 12 days later.

Necropscy Description.

Inspection: Body of a male ngero markedly emaciated. Enlarged and palpable supra-clavicular lymph node left side.

Abdomen: Old scar from laparotomy. Abdominal wall firm and doughy on palpation. Wall thin. Peritoneum thickened and studded with small pinhead sized rough irregular grayish colored tubercles. Omentum pushed and matted together in the upper portion of the abdomen. Free straw-colored fluid in the peritoneal cavity. Two large retroperitoneal tumor masses were found lying parallel to the aorta about 14 cm. long and 6 wide.

Digestive System: Liver extends 3 fingers below the costal margin. Has several whitish nodular masses on the surface. On section it was filled with large discrete nut sized white nodules with a cartilagenous consistency and many similar smaller coalescing nodules. The gall bladder was small, white, firm with markedly thickened white fibrous wall. It contained no bile. There was a large dark colored stone occluding cystic duct. There was no evident malignant change to this gall bladder wall but adjacent nodules in the liver were in direct contact. The common bile duct was patent but greatly thickened and running through a large tumor mass at the head of the pancreas. The pancreas had very little normal tissue and that in the tail. Near the head of the pancreas was a baseball sized tumor mass on section was nodular and necrotic. Microscopic section of this showed glandular epithelial proliferation with central necrosis. Stomach wall thickened (2-3mm.) and studded with tubercles similar to those on the peritoneum. Spleen dark red color cuts with normal consistency. Small intestines matted and adhered together, walls thickened. Mesentary full of small hard nodules ½ to 1 cm. in diameter.

Urinary System: Kidneys matted surface, capsule stripped easily, on section cortex and medulla well differentiated, cortex 1½ cm. thick.

Respiratory System: Lungs adhered completely on all surfaces to the chest wall, mediastinum and diaphragm. There were pea-sized to small orange-sized whitish nodules lying throughout the lung. On section there was a brownish frothy fluid on the cut surfaces. In the right lung there was on old healed tuberculous lesion in the apex. The diaphragm showed no evidences of direct extention of malignancy.

Circulatory System: Pericardial sac opened, 1 dram of fluid clear, straw colored. Several flaky, milky-white areas were found in the pericardium. The pericardium had a light brown color and a glassy cartilagenous appearance.

Head and Neck

Nervous System: No examination made.

Diagnoses

Pathological Findings:

1. Emaciated.
2. Left supra-clavicular lymph gland-carcinoma metastasis.
3. Ascites.
4. Abdominal carcinomatosis of pancreas, peritoneum, liver and retro-peritoneal glands.
5. Carcinoma metastasis in lungs.
6. Chronic interstitial pancreatitis.
7. Chronic cholecystitis, cholangitis and cholelithiasis.
8. Chronic pulmonary tuberculosis.
9. Chronic fibrous pleurisy.

Primary Cause of Death: Adeno-carcinoma of head of pancreas.

Contributory Cause of Death: Chronic interstitial pancreatitis with diabetes. Secondary, carcinomatosis.

Museum Specimens

Carcinoma of pancreas, liver, glands, lung.

THE BAN ON HEROIN

As long ago as 1917, the Council of Pharmacy and Chemistry deleted heroin from its handbook of Useful Drugs, saying: "The council holds that heroin has no advantage over morphin; that it has every disadvantage of morphin; and that on the whole its introduction has been harmful, in that it furnished a specious means on the one hand of avoiding the well founded popular fears of morphin by substituting another habit forming drug." In 1920 the House of Delegates resolved, "That heroin be eliminated from all medicinal preparations; that it should not be administered, prescribed or dispensed; and that the importation, manufacture or sale of heroin should be prohibited in the United States." The recent Congress enacted, June 7, 1924, a bill prohibiting the importation of opium intended for the manufacture of heroin. The Federal Narcotic Control Board has announced that it will not authorize the importation of any opium intended to replace opium or morphin thereafter converted into heroin. This will prevent the open manufacture of heroin in the United States, and as none can be lawfully imported, heroin will soon disappear from the legitimate market.—(Journal A. M. A., Sept. 6, 1924, p. 784.

MEDICAL DYES

The dyes which are used in medicine may be divided into five classes: (1) The azo dyes, of which scarlet red medicinal and scarlet red sulphonate are described in New and Non-official Remedies; (2) the acriflavine dyes, such as acriflavine, neutral acriflavine and proflavine; (3) the fluorescine dyes, usually combined with metal mercury such as mercurochrome—220 soluble and flumerin; (4) the triphenolmethane or rosaniline serier, such as gentian violet, crystal violet, methyl violet and fuchsin, and (5) miscellaneous dyes, such as methylene blue, phenolsulphonephthalein and tetrabromphenolphthalein. In order to obtain comparable results when employed clinically, dyes should be of constant composition. The triphenolmethane (rosaniline) dyes include fuchsin and the closely related violet dyes, gentian violet, crystal violet and methyl violet. Of these, gentian violet is the one that has been used chiefly in medicine. It is stated to have the property of great penetration; to be bactericidal also bacteriostatic in vivo toward selective organisms. Its chief use has been in the treatment of infections of the pleural cavity and of the joints. The intravenous use of gentian violet has also been proposed in staphylococcus septicemia, chronic cystitis, osteomyelitis.

Gentian violet medicinal—a mixture of pentamethylpararosaniline and hexamethylpararosaniline chlorides. For direct application, a solution of from 1:500 to 1:1,000 may be employed; for instillation, a 1:10,000 solution. For intravenous use, 5 Mg. per Kg. of body weight, injected in 0.5 per cent solution has been used.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
Terminal Building, Lincoln, Nebraska.

F. A. Long, M. D., Editor..........Madison, Neb.
R. B. Adams, M. D., Associate and Business Manager..........Lincoln, Neb.
1012 Terminal Building, Lincoln, Neb. Tele. B2625.

COMMITTEE ON JOURNAL AND PUBLICATION.
F. A. Long, Chairman..........Madison
W. O. Bridges..........Omaha
B. F. Bailey..........Lincoln
R. B. Adams, Ex officio..........Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, not the carbon, submitted.

Reprints should be ordered from the printer, The Huse Publishing Co., Norfolk, Neb.

Entered at the Post Office at Norfolk, Nebraska, as escond class matter.

Vol. X February, 1925 No. 2

Annual Meeting, Lincoln
May 12, 13, 14

CALL FOR PAPERS

Any physician who wishes to present a paper before the meeting of the Nebraska State Medical Association, May 12, 13, 14, 1925, will please send in name and title to Dr. George W. Covey, First National Bank Building, Lincoln, Nebr.

Send surgical titles to Dr. Max Emmert, Aquila Court, Omaha, Nebr. This is an appeal especially directed to doctors out in the state.

ANNUAL DUES

The annual dues for membership in the Nebraska State Medical Association are now delinquent. Please send the amount, $5.00, with your local Society dues to your Secretary, as soon as possible, so that he can send in an early report.

R. B. Adams, Sec.-Treas.

THE GENERAL PRACTITIONER AND THE ANNUAL MEETING

The relation of the general practitioner to the next annual meeting is at present foremost in the thoughts of the program committee, but the ultimate result will rest with the individual members of the profession throughout the state.

It is the aim of the committee to present a varied and representative program; in this the committee only can succeed if the responses are varied and representative. No program can be made out of nothing. There have been complaints that there is too much of the ultra-scientific, too much of the rare and unusual, that specialists occupy too much time on the programs and that there is not enough of the practical every-day material presented.

Assuming that this is true, which is open to debate, where does the fault lie?

The writer has the somewhat doubtful distinction of being the only medical editor in the United States who has lived all his professional life at "Main Street", a place of 2000 people, and he may, therefore, rightfully claim to have the general viewpoint of the country doctor. For many years he has been interested in medical organization work and for some years was secretary of the oldest independent district medical society in Nebraska and as such secretary it was his duty from time to time to collect material for the programs. The experience thus gained, and other secretaries and program committees will bear out the conclusion, leads him to observe that the general practitioner is largely at fault in that he will not do his part toward the program. Too few of the men in general work, perhaps due to timidity, are willing to contribute their mites to make society meetings, county, district or state, a success.

Men in special lines, many of them also teachers, are ready writers and fluent talkers and are willing to appear on the programs, and because the program committee needs the material additional places are given to specialists. The general practitioner and the country doctor as a class, not the program committee, nor the specialist, is to blame for the excess of the ultra-scientific, the rare and unusual.

Feeling absolutely confident of the correctness of the diagnosis of the trouble, the editor appeals to the one thousand or more members in general practice throughout the state to apply the remedy which they hold, ask for places on the program: do your part; or, paraphrasing the minister's lecture at the wedding—do it now, or forever after hold your peace!

WHAT SHOULD BE THE ATTITUDE OF THE REGULAR SCHOOL OF MEDICINE TOWARD THE VARIOUS CULTS IN MEDICINE?

The problem of the so-styled "healing cults" is of absorbing interest to our profession as evidenced by the response to the above caption contained in the questionnaire recently submitted to the members of the Nebraska State Medical Association.

Pretenders to medical skill there have always been and doubtless always will be, but their numbers have so multiplied in the last two score of years as to make the problem of the Cults one of deep concern to our profession and to the public welfare. In 1890 there is said to have been about 2000 Cultists and 104,805 registered medical practitioners, a proportion of one to fifty-two. In 1920 there were 14,774 healers and 144,977 classified physicians and surgeons, a proportion of about one to ten. John W. Harrington in Medical Economics, April 1924, estimated that "at this rate there will be nearly 30,000 of these self-styled dispensers of healing by 1930." at which time, if the medical profession follows its trend, there will be about 145,000 regular practitioners, a proportion of nearly one to five.

A perusal of the four hundred and seventeen replies to the questionnaire on Medical Problems in Nebraska reveals many helpful suggestions. The questionnaire may be regarded a cross section of the sentiment of the profession of our state as related to many of the vexed questions effecting the practice of medicine. Answers came from one in three of the members of the State Medical Association and coming as they did from all sections of the state these replies may be reguarded as a fairly comprehensive sentiment of our profession.

Naturally there is wide diversity of opinion. It could not be otherwise with so large a body of men capable of doing their own thinking and practicing their profession under such varied conditions.

In answer to the question:—What should be the attitude of the regular medical profession towards the various Cults in medicine? There is a preponderance of sentiment in favor of ignoring them, or as one tersely puts it—"Let 'em alone! In way of added emphasis we are admonished by another to "distinctly let them alone." While there are those who counsel tolerance there are many who say they refuse to consult with the cultists and one adds that he is "ashamed of some of our leading surgeons who consult with them".

There seems to be a suspicion in the minds of some that possibly there may be some virtue in the cults for not infrequently we are admonished "to appropriate what there is of good, if any, in their belief and practice," and again it is written that "Cults are like Christ's Poor; they are with us always. If they have methods of healing the sick that are good, use them, but otherwise let them alone."

We are advised by an eminent member of the profession "to let them alone and not consult with them. Do not take them into our medical societies until they have completed a full course of medical study"; while another would have us "conduct our own business in a satisfactory manner and pay no attention to them. Let them do their own advertising." A like sentiment is well expressed in the following quotation:—"Personally I have always avoided consultation with any irregular. Have never fought them openly; preferring to put forth the higher standards of regular medicine by comparison. I believe in the old adage of not combating the other fellow's claims but vigorously pushing my own arguments for regular practitioners."

Numerous references are made to educational methods in our medical schools as a means of combating the cults. We read that "anything valuable practiced by the cults should be taught in our medical schools". We are admonished over and over again "to work to obtain legislation so as to raise their standards as high as that which is required of those who enter into the study and practice of medicine." The suggestion is made "to put them all under a common board; let them take the same examinations except in their line of practice, let that be given by a member of their school;" or as again expressed, "I do feel that the State Society should urge upon the state legislature the necessity of having all who attempt to heal the sick being equally qualified in diagnosis. Treatments may differ but diagnosis should not." Another observes that "if the law would require of all practitioners the same amount of training there would not be so many cultists." "Create a chair in the medical schools that would teach the fundamentals of the principal cults" is a suggestion of one, and another opines "that our medical schools should teach whatever they find good in the cults and thereby eliminate them." "We need, says another, a type of medical school that will teach everything that pertains to the getting of a sick patient well, whether it is the giving of a pill, injection serum, operating with a knife, rubbing the back, offering up prayer, or just plain 'looking wise.' I believe as Marshal Field once said: 'give the people what they want,' and we know that they want these other things or the lawyers, preachers and everybody else wouldn't be patronizing them."

A great number favor publicity as a means of combating the cults. Says one: "The regular medical profession should attempt to educate the lay public and this should be done by showing them what the medical profession has done and is doing to safe-guard their health."Another observes: "The best way is to educate the laity as to what is good medical practice and not to fight the cults." Several made the suggestion to "get Hygeia into the hands of the laity." One concludes that "we cannot take a 'holier than thow' attitude. It is entirely a matter of public education." Billings is quoted as saying that the cults are a menace to the public and not to the profession," a statement that will probably not go unchallanged by at least rural members of the profession.

And now "let us hear the conclusion of the whole matter." The preponderance of sentiment seems to be in favor of assuming the attitude of tolerance toward the medical cults; of directing the efforts of organized medicine towards higher achievements within its own ranks; of educating the public in things medical to the end that they may know what the regular medical profession has done and is doing to safeguard the public health and finally to endeavor to bring about legislative enactment that will compel all who presume to practice the healing art, and by whatever name, to subscribe to the same educational standards.

—Palmer Findley.

COUNCILORS MEETING

The annual meeting of the Councilors, the Program Committee, Legislative Committee and Publication Board was held at Omaha, January 12. Report will be published in the March number of the Journal.

MAUDE SLYE AND HER MICE

Before the Lancaster County Medical society and invited guests representing scientific bodies in Lincoln and a number of outstate physicians, Dr. Maude Slye, Chicago University research worker, January 17th gave an address, illustrated by numerous charts, on "Heredity in Relation to Cancer."

Her conclusions are the result of 13 years of research with 47,000 pure bred mice. Her work represents more generations of mice than there have been generations of people since the dawn of authentic history.

Her research has followed the Mendelian Law and has added further proof to Mendel's doctrine of the dominant, recessive and heterozygous — the latter term meaning carrying both potentialities—types of individuals. She has formulated the law—"That which goes into the germ plasm must come out in the offspring." As proof of the heredity of malignancies she has 5000 cases of mouse cancer—post mortemed and proved by all known methods—transmitted by selective breeding. By selective breeding she held off malignancy for fifty generations and then brought out malignancy in the fifty-first generation by crossing with heterozygous individuals.

So far then her experiments have shown an inherited tendency to reproduction of neoplasms. The dictum of the American Society for the Control of Cancer, that cancer is not inherited, it seems, must fall before the work of Maude Slye.

SOCIETY MEETINGS

During the past few years we have heard a great deal of comment upon the small attendance and lack of interest at our medical meetings. With good roads and automobiles the reverse conditions should exist. What is the answer? The two outstanding criticisms of medical meetings which one hears most frequently from the general practitioner are: First—That the papers are too scientific to mean anything to the busy practitioner. Second—That the meetings are used too much as an advertising medium by the specialists.

Whether the above stated criticisms are true, I am not prepared to say but I believe that the matter of society programs should be given earnest consideration in order to develop an attraction for the general practitioner and stimulate his interest to the extent that he will attend and participate in the discussions. In my opinion what we need is practical papers which will help the average man, and the great majority of us are only average, to take care of his patients in the best possible manner. The majority of doctors are not interested in a lot of statistics, a great proportion of which are padded. One case well worked up is of more interest than the report of a thousand statistics on the same subject.

The last two years has developed a marked interest in dry clinics among the larger societies. This idea could easily be developed in the smaller societies. There are always one or more interesting cases in a community. If the attending physician would present the case with a complete history and laboratory findings, then follow with a discussion by one or two men who had previously examined the patient, then open the subject and case to general discussion, I believe we would have a program which would not only be attractive and instructive but would benefit the patient as well as every one present.

—Max Emmert.

EDITORIAL PARAGRAPHS

Give our advertisers a square deal!

E. R. Squibb and Son has a new page ad in this number of the Journal. Read the ads.

Do not grumble because your taxes must be paid; be thankful that you have taxes to pay.

The matter of climate is largely a matter of personal psychology — and the ability to pay the coal bill.

The Archives of Otolaryngology, from the American Medical Association Press made its appearance in January.

A 26-year-old Chicago chemist is said to have isolated the active principles from insulin and diphtheria antitoxin.

Thanks, largely, to the two Class A medical schools in Omaha, the profession of this state has made immense strides forward during very recent years.

Report comes from the William C. Gorgas Hospital, Tampico, Mexico, that mercurochrome has been found to be a cure for chronic malarial poisoning.

With the idea of centralizing the business activities of the Association Dr. R. B. Adams, secretary, has been designated business manager of the Nebraska State Medical Journal.

Creighton University has adopted the principle of requiring physical examination of all students entering the several departments of the university. The work is done under the supervision of the college of medicine.

The Omaha city health commissioner fearing a wide spread epidemic of small-pox ordered vaccination by the thousands in the public and parochial schools affected. That kind of courage and promptitude is what wins in threatened epidemics.

The Wisconsin Medical Journal published a lay issue in January. The number is a work of art and the material was well selected. The number could be favorably compared with Hygeia. The idea of a lay number of a state medical journal is somewhat appealing.

Hygeia: A Journal of Individual and Community Health, published by the American Medical Association is really a wonderful magazine, based on scientific medicine, filled with good sensible things for the lay reader. Physicians should do a little missionary work by introducing Hygeia to their people.

A queer phase of the psychology of the lay mind comes to the surface when a physician having had charge of a patient is superseded by another physician, whose opinion as expressed, is not in accord with the opinion of the first physician. The last medical advisor is always right (?) and the (supposed) fact is heralded with some emphasis.

Health Commissioner Pinto's philosophy of marriage without issue, as, with rare exceptions, little less than legalized prostitution, is rather startling even though true. Like Osler, when he jocularly advanced the dictum that he had thought a doctor should be chloroformed when he reached sixty, Dr. Pinto may not have been altogether in earnest; but it is just as well sometimes to have people "stand up and take notice."

A cultist in a county seat town in Nebraska recently purchased a double column six inch space in the local paper to misstate the college requirements for graduation in medicine, in columns parallel with the requirements for two of the cults. The medical faculty of that town, consisting of three live "medics", purchased ten inches double column and showed him a first rate prevaricator. Thus is the laity being educated.

Within a few months three physicians whose papers had been published in the Journal during the last half of 1924, asked for reprints months after the publication of the article and after the type had been distributed. The printer cannot be expected to hold the galleys indefinitely and the rule is to destroy the galleys thirty days after the publication of the article. Authors must govern themselves accordingly.

THE SOCIETIES

The annual meeting of the **Omaha Douglas County Medical Society** was held December 9th, at the University Club, Omaha. The report of the secretary-treasurer was read for the year. You may be interested in the following resume:

Membership, Dec. 1, 1924	312
New members	19
New members by transfer	4
New members by re-instatement	0
Honorary members	6
Non-resident members	9
Lost by death	4
Lost by unpaid dues	6
Lost by transfer	8
No. of meetings of the Society	12
No. of meetings of the Council	12

Drs. Joseph McCarthy, A. A. Steinberg, R. B. Eldrege and Chas. F. McDonald were elected to membership. Dinner was served to a hundred members, after which the annual election took place, Dr. Rodney W. Bliss being elected president, Dr. A. Sachs, vice-president, and Dr. E. C. Sage as secretary-treasurer. About two hundred members listened to the honored guest of the evening, Dr. W. W. Duke of Kansas City, talk on the "Causes and Effects of Allergy", a most instructive and interesting paper. —Earl C. Sage, Sec.

The regular annual business meeting of the **Lancaster County Medical Society** was held at the Orthopedic Hospital, Saturday evening, December 20, 1924.

Dr. O. S. Fowler of Denver lectured on "Nephroptosis." Dr. Fowler showed various forms of kidney affliction resulting from imperfect drainage of the kidney caused by any stoppage of the urinary tract. He considered an infected kidney that still retained a very small portion of reasonably healthy tissue could be saved from removal by establishing proper drainage. Many abdominal symptoms caused by kidney complications were overlooked or considered to be from some other cause. The treatment is mostly surgical in which he raises the lower portion of the kidney, thereby removing all obstruction and establishing drainage of the kidney directly downward; thereby relieving the stagnation caused in that portion of the kidney which was below the drainage area. He considered the average liquid excretion much less than should be considered normal, urging greater intake of liquids, thereby, continually carrying away the waste products.

This was one of the very best up to date and instructive lectures ever delivered before our society. It furnishes a complete change in the general treatment of many kidney complications.

After the lecture many questions were asked relative to various procedures. Dr. A. R. Mitchell spoke for the society expressing appreciation of this most instructive lecture. The secretary's report was read and unanimously approved. The treasurer's report was read and unanimously accepted and filed with the secretary's records.

The officers for the ensuing year were elected according to the newly adopted constitution and bylaws. Dr. D. C. Hilton was elected president; Dr. H. H. Waite, vice-president; Dr. George H. Walker, re-elected treasurer; Dr. A. D. Munger, secretary. Dr. George W. Covey and Dr. H. H. Waite re-elected delegates to the state convention for two years. Dr. J. J. Hompes was elected alternate to Dr. Covey and Dr. S. C. Clements was elected alternate to Dr. Waite. Dr. D. C. Hanson was elected censor for three years. Dr. J. J. Hompes was elected trustee to the permanent home for six years, Dr. J. S. Welch trustee for four years; Dr. B. F. Bailey trustee for two years. Dr. A. R. Mitchell was elected historian for a term of one year.

The retiring officers hereby extend to the newly elected officers their best wishes for not only their success but a continued success for the good of the society.

—D. D. Sanderson, Sec'y.

The regular meeting of the **Lancaster County Medical Society,** was held January 3rd at the Orthopedic Hospital, under the direction of the new president, Dr. David C. Hilton.

In the call for clinical cases, Dr. Geo. W. Covey reported a case of Hemolytic Streptococcus Bacteremia, in a child nine years of age. Because of the atypical nature of the condition upon admission the case was considered one of the primary blood dyscrasias. Tentative diagnoses were made at the time of admission of (1) Banti's Disease, (2) Acholuric Anemia, (3) Von Jasch's Anemia, (4) Pernicious Anemia, and (5) Indefinite Splenic Anemia. It was not until the child developed an acute mastoiditis that a definite diagnosis of the blood stream infection could be established. Surgical removal of contributing infected foci with blood transfusion and mercurochome intravenously were all of no avail and the patient died on Dec. 16th, after six months of hyperpyrexia. The autopsy findings showed a predominance of petechial hemorrhages and areas of fatty degeneration in various organs of the body.

Dr. Clarence Emerson reported a case in a woman wherein a right nephrectomy had been done several years ago. Previous to this the patient had had a nephropexy on the same kidney. At the time of nephrectomy the previously suspended kidney showed complete atrophy. Following the nephropexy there was apparently no relief. At the time the woman was admitted to the hospital there was an absolute suppression of urine from the remaining left kidney. X-ray pictures revealed a large stone in the parynchema of the left kidney, with another stone imbedded at the uretero-pelvic junction. Dr. Emerson attempted to catheterize the left kidney for drainage. The case remained in state of suppression for about 24 hours after attempted catheterization and then began to secrete a goodly amount of urine. During this period a pyelotomy was suggested to the patient but family refused.

It is interesting to note that x-ray pictures showed a large calculus in the intra-mural portion of the remaining stump of the right ureter.

Dr. A. D. Munger presented a symposium on

Renal Dystopia. A plea for treatment of these cases under modern urological conservative measures was made in contradistinction to the all too frequently instituted radical measures of nephropexy.

The paper of the evening was presented by Dr. James E. M. Thomson, entitled, "Fractures of the Lower Third of the Leg Treated by Fixed Traction". Dr. Thomson showed a very interesting series of pictures and presented his ideas in this method of treatment as deduced from his experience in a series of 24 cases. He pointed out the advantages of reduction followed by fixed traction incorporated in the immobilization dressing at the time of reduction.

He further pointed out the disadvantages of the weight and pully traction. Considerable stress was put upon the follow-up treatment in these cases with various forms of fracture appliances to obviate subsequent deformity. The paper was variously discussed by Drs. Emerson, Rider, Rowe and closed by Dr. Thomson. In the discussion the question was raised whether this method of fixed traction did not border on unwonted radicalism. A further question was raised as to the probability of the method placing a premium upon bone infection. It was Dr. Thomson's opinion that the procedure was neither radical nor contributed to possible bone infection.

—Arbor D. Munger, Sec.

The Lincoln County Medical Society met at a dinner at the Union Pacific dining room in North Platte, at 6 P. M., December 30, 1924. After the dinner the meeting adjourned to Dr. T. J. Kerr's office where the annual meeting and election of officers took place.

The officers elected were as follows: Dr. H. H. Walker, president; Dr. J. B. Redfield, sec.-treas.; Dr. G. B. Dent, delegate.

The secretary reported the largest number of meetings in 1924 in the history of the organization. It was voted to hold meetings in 1925 on the first Tuesday of each month.

Dr. Claude Selby then invited the society to his residence for the February 1925 meeting and his invitation was unanimously accepted.

The doctors present reported much good from the meetings held in 1924.

—J. B. Redfield, Sec.

Thirty members of the **Dodge County Medical** Society attended the annual meeting at the Pathfinder Hotel, Fremont, January 9th. Dr. G. S. Reeder, Fremont, was elected president, Dr. R. T. Van Metre, Fremont, secretary-treasurer. The plan of organization of the American Medical Association and its component societies was fully discussed. Semi-monthly meetings for the current year were planned.

The Thayer County Medical Society met in annual meeting at Hebron, January 8. This meeting was postponed from December, due to bad roads.

Officers elected for 1925: President, Dr. U. H. Squires, Hebron; sec'y-treas., Dr. Rudolph F. Decker, Byron (re-elected).

Dr. A. N. Anderson, Belvidere, read a paper on "Gymnastics and Swedish Movements as Therapeutic Measures."

At the annual meeting of the **Phelps County Medical Society**, Holdrege, December 16, Dr. Wm. Robertson, Holdrege, was elected president; Dr. J. L. Magill, secretary-treasurer and also delegate.

HUMAN INTEREST TALES

Dr. W. J. Conner, of Lincoln, has located at Petersburg.

Dr. J. M. Chesshir has moved from Geneva to Superior.

The wife of Dr. Fred. Schaufelberger, Hastings, died January 13th.

The Seiler Surgical Co., has moved to 1818 Farnam street, Omaha.

Dr. J. H. Romig, Fairbanks, Alaska, surgeon, visited in Omaha in January.

Dr. D. C. Stansberry has moved from Angus to Geneva, his former location.

Dr. H. J. McArthur, Omaha, spent two months in Florida during early winter.

Dr. W. M. Davis, Omaha, suffered a severe attack of pneumonia in December.

Dr. and Mrs. Fred Gaarde, Rochester, Minn., visited relatives at McCook, recently.

Dr. Wilfred A. Ash of the Mayo Clinic visited his people in Omaha during the holidays.

Dr. J. H. Smith, retired Albion physician, has undergone a cataract operation recently.

Dr. A. N. Compton, Valentine, submitted to an operation for sinus trouble in Norfolk recently.

The Phi Beta Pi medical fraternity held its national convention in Omaha during the holidays.

The partnership heretofore existing between Drs. Crawford and Broz, Rushville, has been dissolved.

Dr. D. O. Hughes, of Omaha, has gone to Rushville to become associated with Dr. W. H. Crawford.

Dr. J. M. Tische, formerly of Ainsworth, has located at Tekamah to do eye, ear, nose and throat work.

The midwinter meeting of the Elkhorn Valley Medical society has been deferred to some time in March.

Dr. J. I. Miller, has left Pine Bluffs, on the Nebraska-Wyoming border, to take up practice in Gary, Indiana.

Dr. A. C. Barry, Norfolk, spoke before the local Kiwanis club recently on the history of modern surgery.

Dr. Harold S. Morgan of the University of Michigan medical school spent the holidays with his parents at Lincoln.

Dr. H. von W. Schulte was reelected president of the Professional Men's club of Omaha, at the December meeting.

Oakland has a new community hospital under the auspices of two nurses, Miss Emily Johnson and Miss Nora Nelson.

Dr. Victor S. Levine was elected chairman of the Omaha section of the American Chemical society at the December meeting.

Dr. L. Phelan, Grand Island, spoke before the Central City Lions club recently on the History of Medicine and Surgery.

Dr. H. M. McClanahan, Omaha, has gone on a trip to Florida, Havana and through the Panama Canal to San Francisco.

Dr. George F. Johnson and Miss Helen M. Anderson, Bridgeport, were united in marriage the middle of December last.

Dr. F. B. Young, Gering, was elected president of the staff of the West Nebraska Methodist hospital at the December meeting.

Dr. Albert W. Bryan, for several years connected with the Mayo Clinic has become associated with Dr. B. F. Williams, Lincoln.

A Dr. Jackson of Omaha has taken over the field of practice formerly occupied by Dr. W. R. Talboy, Newcastle, now in the legislature.

Dr. C. H. Newell, Omaha, recently lectured in West Point under the auspices of the Community club on "First Aid to the Injured".

A group of twenty nurses and students of the University medical college was entertained by Dr. and Mrs. A. D. Dunn, Christmas Eve.

Dr. LaZelle Sturdevant, surgeon on the revenue cutter Bear cruising the north Pacific, visited his parents at Atkinson during the holidays.

Dr. F. A. Mountford, Davenport, and Dr. M. F. Schaefer, Alexandria, have recently located at these places. Also Dr. E. A. Sommer, Deshler.

Dr. G. F. Ewing, for the past year a physician at Wood Lake, has moved to Grand Junction, Colorado. This leaves Wood Lake without a physician.

Dr. C. R. Mullong, Norfolk, is the author of a novel of modern marriage entitled "Beyond Paradise", published by Dorrance and Co., Boston.

Dr. A. J. Ramsey, for twenty-five years a practicing physician at Auburn, more recently of Elm Creek, has returned to Auburn to engage in practice.

Dr. A. A. Fricke, former Omahan, now and for several years past in Los Angeles, tells us that he is now pleasantly ensconced at 1005-6 Union Bank Building. He is doing work in obstetrics and gynecology.

Dr. F. A. Barta, Ord, who has spent five months abroad, mostly at the Viennese clinics, has returned. He has qualified for an eye, ear, nose and throat surgeon.

By the destruction by fire of a Columbus business block December 22, Dr. A. G. Lueschen and Dr. D. T. Martyn, Jr., suffered the loss of all office paraphernalia.

Dr. Howard Heine, for a number of years in general practice at Hooper, has fitted himself for special work in eye, ear, nose and throat troubles and has located at Fremont.

Dr. and Mrs. Leroy Crummer, Omaha, have gone to Los Angeles where the doctor will give an address before the California Academy of Medicine on "The History of Medicine".

Dr. Joseph McNulty, for twenty years a practitioner at Taylor, has notified his people that he retires from country practice. This leaves an immense territory without a physician.

One hundred twenty-five premedic students were entertained by the Mu Epsilon Delta sorority at the Grand hotel, Lincoln, recently. Dr. Olga Stastny, Omaha, was the principal speaker.

Dr. A. E. Hoff, North Bend, who has been ill for some time, and has travelled some in an effort to get relief, has returned home and resumed practice much encouraged and improved.

To have it out or not; that is the question confronting Dr. E. R. Hays, Falls City, with reference to the gallbladder, which has been disturbing his internal economy since mid-summer.

A malpractice suit against Dr. Clyde Roeder, Omaha, in which $30,000 was asked because a gauze sponge was alleged to have been left in the wound, was decided in favor of the defendent.

Dr. Eugene F. Du Bois of New York City, delivered a lecture before the University of Nebraska College of Medicine on "The Proportion in Protein, Fat and Carbohydrates Metabolized in Disease", in December.

Dr. F. A. Wells, Axtell, prominent member of the Nebraska State Medical Association for many years, has accepted a position as medical examiner in the War Veteran's Bureau and will be stationed at Minneapolis, Minn.

The marriage of Dr. W. C. Kenner, Jr., and Miss Theodosia Kroehler at Stillwater, Minn., is announced. The doctor is an Omaha and University of Nebraska medical college product and the bride is a nurse and was reared at Plattsmouth.

Miss Frances Barnhart, Omaha girl, senior in Bellevue Hospital Medical college, took the highest honor in her class and was, therefore, given the most responsible appointment among the internes. She is the first woman ever thus recognized.

The following medical men attended the Radiological Meeting at Kansas City in December: Rush, Beatrice; Woodruff, Grand Island; Rork, Hastings; Barnes, Albion; Kail, Smith, Rowe, Lincoln; Harris, Fouts, Shearer, B. B. Davis, Ross, Kelley, Tyler, Quigley, Ballard, Overgaard, Omaha.

NECROLOGY

G. W. Wilkinson, Dakota county pioneer physician and prominent Nebraskan, died at the home of a son at Millersville, S. D., Christmas eve, 1924, aged upward of 80 years. Dr. Wilkinson graduated from a Chicago medical college in 1858, and located in Dakota county the same year. He served in the First Nebraska Regiment during the Civil War. From 1865 to 1870 he was physician at the Winnebago Indian Reservation. Sometime he was U. S. agent for the Winnebago reservation. In 1870 he was appointed receiver of U. S. land office at Dakota City. Later he was county treasurer of Dakota county. About 1890 he was superintendent of the Norfolk State Hospital for the Insane. Interment at Norfolk.

W. K. Miller, Alliance, Nebr.; Rush Medical College, about 1872; in practice at Birmingham, Libertyville and Winterset, Iowa, in his earlier years and from 1877 to 1906, when deafness compelled retirement, a practitioner at Alliance, Nebr., died December 27th, aged almost 81 years. Dr. James Miller, Ashville, N. C., and Dr. J. B. Miller, Tina, Mo., were brothers of the deceased.

Floyd L. Newcom, Arlington, Nebr.; University of Nebraska College of Medicine, 1920; died after a lingering illness, December 31, 1924, aged about 31 years. He is survived by a widow and an infant son.

T. D. Thompson, West Point, Nebr.; University of Pennsylvania, 1873; for fifty years a widely known practicing physician at West Point; for the past two years president of the Cuming County Medical society; died at his home January 13th of pneumonia complicating a heart lesion, aged about 76 years. Dr. Thompson's father was a physician; a brother, Dr. Lewis Thompson resides at Reading, Pa.; four sons entered the profession—Dr. Warren Thompson and Dr. Chester Thompson, Omaha, Dr. Richard Thompson, New York City, and Dr. Kimball Thompson, deceased. (See page 414, October, 1924 Journal).

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, March, 1925 No. 3

CONTENTS

Page
Fundamental Principles of X-Ray Diagnosis in Diseases of the Pleurae and Lungs, Albert F. Tyler, B. Sc., M. D., F. A. C. P. 73
One Hundred Cases of Cardiac Irregularities Due to Extrasystoles, Arthur L. Smith, M. D., A. B., F. A. C. P. 78
Rupture of the Spleen, J. F. Langdon, M. D., F. A. C. S. 83
Ileus, V. V. Smrha, M. D. 88
Modern Aspects of Nutrition, Victor E. Levine, M. A., Ph. D. 91
Surgery of the Kidney, J. M. Willis, M. D. 95
A Summary of the Recent Developments in the Etiology and Diagnosis of Scarlet Fever, W. B. Moody, M. D. 98
A Case of Suppurative Destruction of the Thyroid with Resulting Myxedema, Malcolm B. Wilcox, M. D. 100
Meeting of the Board of Councilors 101
Page

EDITORIALS—

Call for Papers 104
Dues 104
Leadership and "The Ring" 104
The Defense Fund and Malpractice Suits 105
Scientific Medicine or Cultism 105
Dr. Irving S. Cutter, Dean 105
Should the Nebraska State Medical Association Engage in Propaganda for the Purpose of Educating the Lay Public? 106
Tuberculosis and the Eye 108
A Question of Ethics 109
Editorial Paragraphs 109
Maternal Mortality in Omaha 110
The Societies 111
Human Interest Tales 111
Necrology 112
Book Reviews 112
Books Received 112

FUNDAMENTAL PRINCIPLES OF X-RAY DIAGNOSIS IN DISEASES OF THE PLEURAE AND LUNGS*

Albert F. Tyler, B. Sc., M.D., F. A. C. P., Omaha, Nebr.

The ease with which the chest can be visualized with the x-ray made this one of the early fields of x-ray diagnosis. The meaning of the complicated shadows seen on an x-ray film of the chest, however, has been a constant source of study by the leading clinicians and roetgenologists. The shadows are complicated because of the chest being thick so that shadows in many different planes are thrown one upon the other upon the film. This is further augmented by the anatomy of the lungs and other structures of the chest, the bronchi radiating out from the lung root like the branches of a tree. As close companions of the bronchi are found the arteries, veins and lymphatics, all of which help to increase the multiplicity of the markings on the x-ray film.

The various folds of the pleural sac are also sources of confusion since pathological changes are so varied. Beside the multiplicity of the shadows due to the viscera contained within the chest, the super-imposed shadows of the structures of the chest wall, the ribs, the spine, the sternum, the muscles, the skin and the breasts must be added. Many pitfalls in interpretation are caused by changes in the structures of the chest wall which may confuse with intrathoracic shadows. The shadows of the breasts, the nipples, the pectoral muscles or even a wart on the skin may be misinterpreted as pathology within the lung.

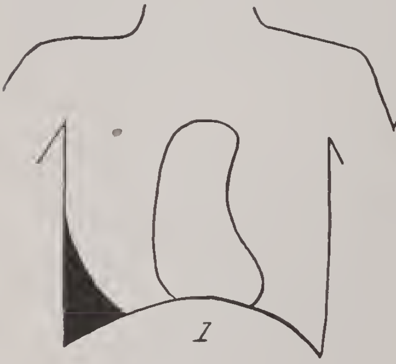
Still another peculiarity of the viscera of the thorax increases the difficulty of interpretation. The heart is constantly moving and with its movement produces pulsation of the lung for a considerable distance around it. Long exposures employed in making x-ray films of the chest result in hazy, indistinct shadows due to the movement transmitted to the surrounding structures by the pulsating heart. Short exposures are necessary to catch the image as near stationary as possible.

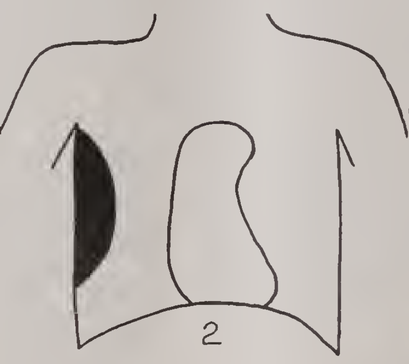
---

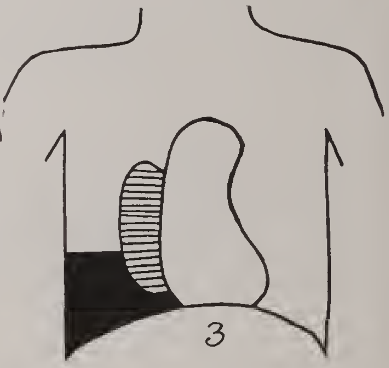
*Read in Chicago, Oct. 21, 1924.

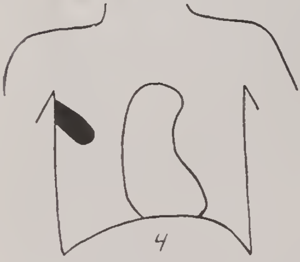
The attitude of the patient adds further difficulties to obtaining proper shadow values. When the patient is nervous and afraid, as frequently is the case in children and occasionally in adults, movement often occurs during exposure. If the patient does not move the entire body he may fail to hold the muscles of respiration at rest during the exposure. In either event, indistinct shadows result.

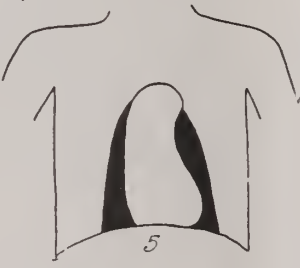
Errors in the mechanical aspects of the technique may further add to the difficulties of diagnosis. One of the requirements for success is a fine focus tube which should be so mounted that no vibration occurs during the exposure. The anode of the tube should be at least thirty inches away from the film in making exposures of the chest. Distances greater than this further enchance the detail of the image. No chest examination should be considered properly done unless stereoscopic films have been employed. Only by this method can the multiple shadows on the chest film be separated and identified.

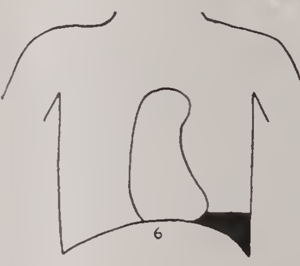


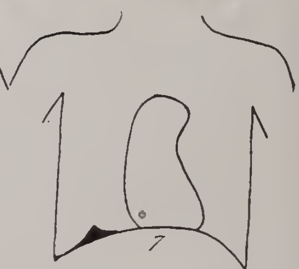


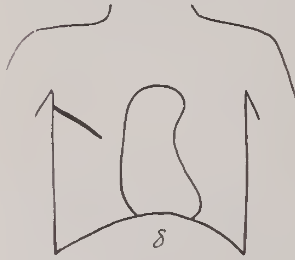


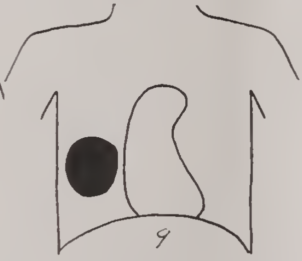


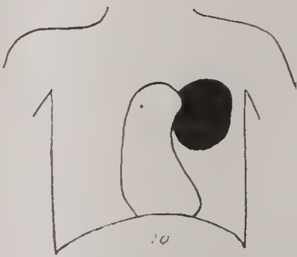












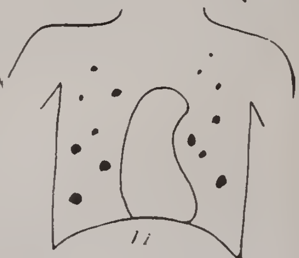


FIG. 1. Diagrammatic drawing of fluid in the large pleural sac showing the "curve of Damoiseau."

FIG. 2. Diagrammatic drawing of encysted fluid in the large pleural sac.

FIG. 3. Diagrammatic drawing of fluid and air in the large pleural sac, with the lung collapsed around the root.

FIG. 4. Diagrammatic drawing of fluid in the interlobar space.

FIG. 5. Diagrammatic drawing of fluid in the posterior (right side) and anterior (left side) mediastinum.

FIG. 6. Diagrammatic drawing of left sided supradiaphragmatic fliud.

FIG. 7. Diagrammatic drawing of adhesions to the dome of the right diaphragm.

FIG 8. Diagrammatic drawing of thickened interlobar septum.

FIG. 9. Diagrammatic drawing of a cyst in the lung.

FIG 10. Diagrammatic drawing of a new growth arising from the mediastinum and pushing out into the left upper lung field.

FIG. 11. Diagrammatic drawing of new growtbs in the lungs metastasizing from a distant part of the body through the blood stream.

Of course, gross pathology can be seen on a single flat plate but the early areas of disease can only be identified by stereoscopic study. The areas of pathology in the parenchyma of the lung which are too small to give physical findings on percussion can be definitely visualized and located by stereoscopic study. The great value of stereoscopic study is nowhere so easy of demonstration as in the examination of the chest.

In addition to the various factors already mentioned as entering into the proper x-ray study of the chest, other fundamentals may be studied which have to do with the routine of the examination. It is important that fluoroscopic study of the patient should precede the making of the stereoscopic films so that the roentgenologist may more intelligently place the patient in order to demonstrate the pathology most clearly.

Where possible, the films should be exposed with the patient in the upright position. Of course, exceptions must be made to this rule where patients are very ill. But even in these cases the roentgenologist is impressed with the greater value of the upright position during the examination.

Certain positions have been found most valuable so might be called, "standard." These are the antero-posterior, the right anterior-oblique, the left anterior-oblique and the postero-anterior. During fluoroscopic examinations of each patient all of these positions should be used. Stereoscopic plates should be made with the anterior surface of the chest nearest the film while the tube is behind, the x-rays passing through from posterior to anterior. The anterior-oblique positions give a clear view of the mediastinum and its contents. Where pathology is demonstrated or suspected, films should be made in this position as well as in the postero-anterior position.

When it is desirable to know the actual size of the heart and great vessels the anode of the tube should be six feet away from the film, the exposure being long enough to compensate for the greater distance and to allow the heart to complete one full cycle.

THE NORMAL IMAGE

When one views the image of the normal chest on the fluorescent screen or on the x-ray film there appears the image of the heart and great vessels in the central region with the diaphragm curving across below. The costophrenic angles should be quite acute and fill well with air. The movements of the diaphragm should be free and easy on both sides, the right side usually being slightly higher than the left. The apices of the lungs should fill well with air on deep inspiration and on coughing. Both lung fields should fill equally well with air throughout their entirety. The heart and great vessels should be normal in size and movements with the mediastinum clear and free from shadows. The lung roots should be demonstrable and the bronchi should show plainly well out into the lung fields.

DISEASES OF THE PLEURAE

1. Fluid Free in the Pleural Sac—In this discussion no attempt will be made to distinguish between simple effusion and purulent effusion since the x-ray findings have little value in this differentiation. The study of the patient should be made with him in the upright position. Fluoroscopic study is especially valuable here since the patient can be viewed at various angles and can be tipped from side to side to demonstrate possible change of level in the fluid. As the fluid forms it seeks the lowest level which is at the costo-phrenic angle when the patient is upright. The presence of fluid in the angle pushes the lung out of the angle so that a very small amount of fluid can be demonstrated radiologically. The angle changes to liver density instead of lung density as in the normal. Due to the pressure of the air filled lung against the fluid, the axillary portion of the fluid is much higher than the diaphragmatic portion producing the "curve of Damoiseau" (Fig. 1). On the affected side the normal acute costo-phrenic angle becomes replaced by an obtuse one with no air entering the angle. In case the entire pleural sac is filled with fluid, as is frequently seen in children, the entire lung field on the affected side shows liver density. Whether partial or complete the movement of the diaphragm on the affected side is obliterated.

In massive effusion in the pleural sac the heart and great vessels are displaced away from the affected side, becoming noticeably prominent in the opposite lung field.

2. Encysted Fluid. This is frequently found during epidemics of streptococcus influenza, the fluid becoming encysted in some particular portion of the pleural sac by the formation of adhesions between the parietal and visceral layers of the pleura (Fig. 2). It is important to study the patient in the upright position by means of the fluoroscopic screen since the localized fluid can be visualized best when the patient is in a position so that the affected area is silhouetted on the screen. The films are made stereoscopically in the postero-anterior position with an additional one in the position which showed the pathology best on the fluoroscopic screen.

3. Fluid and Air with Lung Collapsed.

When the chest wall is perforated or the periphery of the lung is perforated so that air enters the pleural sac, collapse of the lung occurs. The collapsed lung remains fixed about the root and can be seen on the fluoroscopic screen as a dense shadow adjacent to the heart and moving with each heart beat. The complete absence of lung markings in the affected side is characteristic. Fluid soon forms in small quantity which slowly increases.

With the patient erect the fluid will be observed as liver density occupying the angle and upward so that when considerable fluid is present the normal curve of the diaphragm will not be seen. Instead of the "curve of Damoiseau" the fluid now seeks its own level which lies horizontally, shifting as the position of the patient is shifted (Fig. 3). When the patient is shaken or moves suddenly one can observe splashing. As the heart pulsates, waves synchronous with the heart beat will be seen on the surface of the fluid. The absence of lung markings with the presence of air above and fluid below make the contrast striking. In cases with pleural adhesions the lung will not completely collapse so that the above image will then be altered.

4. Interlobar Fluid. At times fluid may accumulate between the lobes of the lung, the margins of the pleura along the interlobar fissure become adherent retaining the fluid and preventing its escape into the general pleural cavity. In interlobar fluid the increased density occupies the space normally occupied by the interlobar fissure giving the appearance of projecting from the chest wall inward (Fig. 4). Occasionally an accumulation of fluid between the lobes of the lung will rupture spontaneously into the general pleural cavity. This will cause a sudden reduction in the size of the interlobar shadow accompanied by the appearance of a fluid shadow in the costo-phrenic angle.

5. Mediastinal Fluid. In other cases there will be an accumulation of fluid in the mediastinum. This may appear on either or both sides of the heart image but will not conform to the contour of the pericardium. It may accumulate in the anterior or the posterior mediastinum. When in the posterior mediastinum the oblique view will reveal a shadow anterior to the spine but close to it. The antero-posterior view will reveal a dense shadow to the right of the heart roughly triangular in contour, the base at the diaphragm and the apex at the great vessel area (Fig. 5).

When the anterior mediastinum is filled with fluid the shadow is visualized to the left of the heart much as a dilated thoracic aorta is seen.

6. Supradiaphragmatic Fluid. The location of fluid on the superior surface of the diaphragm is more frequent than was formerly thought. Physical signs may be very meager or absent entirely so that radioscopic examination assumes a very important role in the diagnosis of the condition. Where the fluid is on the left side one will observe that the diaphragm does not move on that side. In addition. one will observe a shadow of liver density several fingers in width above the diaphragm but resting upon it. Where the entire half surface of the diaphragm is covered the shadow is horizontal and extends from the heart shadow to the left chest wall. Observation of the normal gas bubble in the stomach or if necessary, inflation of the stomach, will determine whether the fluid is above or below the diaphragm. When the accumulation of fluid is on the right side the presence of the liver and inability to place gas under the right side of the diaphragm makes the localization very difficult. The employment of pneumoperitoneum, however, will enable a definite, localization to be made. (Fig. 6).

7. Adhesions or Thickening of the Pleura.

A. At the angle: Marked thickening of the pleura always occurs when fluid has been present in the pleural sac. The thickness is greater when the fluid is purulent in character, frequently being 1-2 cm, in thickness. For many months after the fluid has been drained or has absorbed without drainage, the thickened pleura can be visualized radioscopically. It is frequently very difficult to determine whether the increased density is due to failure of the fluid to absorb or to thickened pleura remaining after absorption. The shadow seen corresponds to the area previously occupied by the fluid, hence looks quite similar to Fig. 1.

B. At the apex: The late Van Zwaluwenburg called our attention to the radiographic demonstration of a thickened pleural cap in cases of pulmonary tuberculosis involving the apex. When present, it is clearly seen as a cap of increased density fitting over the apex, the lower border being visualized as a horizontal white line in the first interspace posteriorly. Our observation has confirmed that of Van Zwaluwenburg.

C. Diaphragmatic: Attacks of localized diaphragmatic pleurisy are difficult to diagnose, consequently, often go unrecognized. Recovery frequently takes place by the formation of adhesions between the visceral and parietal layers of the pleura. When this is present it is easily recognized both on the fluoroscope and the film. It is characterized by a change in the normal contour of the diaphragmatic image, looking as though someone had put a thread through the diaphragm and lifted upward on it at the time the film was made. (Fig. 7). This is best demonstrated by making the film while the patient holds the breath at full inspiration.

D. Interlobar: In many patients one notices a thickening of the interlobar pleura. This is a sequel to either a dry pleurisy or a moist pleurisy. Dr. A. Beclere, 1902, has called our attention to the fact that it is best demonstrated by passing the x-rays through the chest in a plane parallel to the interlobar septum. For example, if the thickened pleura is between the right upper and middle lobes, the rays should be passed through the chest from the back, downward and forward. This procedure enables one to visualize the interlobar septum on edge, thus increasing the density and making it more easily distinguished from the surrounding normal lung. The line divides the affected lung into two parts, one above and one below as in (Fig. 8).

E. Mediastinal: Adhesions or thickening of the mediastinal pleura may follow either a dry or moist pleurisy. This type is less frequent than the interlobar but is occasionally seen. It assumes the form of the space previously occupied by the fluid (Fig. 5), or when no fluid has been present the mediastinal pleura becomes thick and is visualized on the radiograph as a broadening of the mediastinal shadow, the lateral sides conforming to the contour of the mediastinal pleura.

DISEASES OF THE LUNGS

1. Tuberculosis is the most common disease of the lungs and is found in two forms.

A. The lobar type is most commonly seen where the disease originates in one lobe and is chiefly confined thereto. Radiographic study of this type shows the disease generally in the upper lobes. Stereoscopic study will show many small areas of peripheral parenchymal pathology which gradually enlarge and coalesce until the whole lobe becomes involved. The peripheral parenchymal pathology is the significant thing in early diagnosis and can only be accurately studied by the stereoscopic method. Later the older areas may break down, be expectorated and cavities result. In cases where healing occurs, without cavitation, areas of fibrosis or calcification may be seen.

B. The miliary type is visualized on the x-ray films as many small areas of peripheral parenchymal pathology scattered throughout the entire space of both lungs. In this type, x-ray films are of great value in the diagnosis because of the fact that the physical findings are the same on both sides. In fact, a definite diagnosis can scarcely be made without the aid of x-ray examination.

2. Pneumonia.

A. The lobar type of pneumonia can be positively identified very early in the disease so that when the lesion is centrally located the x-ray study has great clinical value. The disease is shown on the x-ray film as an area of increased density (consolidation), confined to the one lobe, usually the lower, in strong contrast to the lobar type of tuberculosis. When coupled with the other physical findings and the history the diagnosis is completed.

B. The influenzal type of pneumonia shows a different clinical and radiographic picture than that mentioned above. In this type the x-ray film shows many small areas of increased density (consolidation) scattered throughout both lungs but more especially in the lower half.

3. Bronchiectasis. This disease is shown on the x-ray film as either an infiltration along the course of the bronchi or as multiple cavities opening into the bronchi. The findings are most extensive in the lower half of both lungs. When coupled with the other clinical findings a very accurate knowledge of the pathology is gained.

4. Cyst. Cyst of the lung is infrequent but when seen gives a definite shadow on the x-ray films. It will be seen as a definitely circumscribed area of liver density surrounded on all sides by the normal lung image. (Fig. 9). One case recently coming under my observation was a dermoid cyst from which one gallon of sebaceous material, hair and skin was removed.

NEW GROWTHS

These may occasionally be seen as primary new growths in the chest. The most common site of origin is from the lymph glands of the hemtihorax. (Fig. 10). When primary sarcomas but carcinomas do occur. They may grow to enormous size, occupying not only the mediastinum but crowding out into the lung field, even filling the major portion of the homithorax. (Fig. 10). When primary in the pleura they usually show on the x-ray film as an area of liver density pushing into the lung field from the chest wall.

Very frequently metastatic new growths are seen in x-ray study of the lung. Both sarcoma and carcinoma may enter the lung from a distant part of the body. The most common location of the primary growth is in the testicle in men and in the breast of women. The malignant emboli are carried through the blood stream to the small arterioles of the lung where they lodge and begin to grow. They show on the x-ray film as multiple small definitely circumscribed areas of liver density scattered throughout the lungs. The older ones will be large and the more recent ones small. They will be surrounded on all sides by normal lung tissue. (Fig. 11).

ONE HUNDRED CASES OF CARDIAC IRREGULARITIES DUE TO EXTRASYSTOLES*

Arthur L. Smith, M. D., A. B., F. A. C. P., Lincoln, Nebraska.

In a perusal of the medical literature there are many conflicting ideas concerning the significance of extrasystoles, these ideas varying from those who believe they have no significance whatever to those who believe they are of "grave import". With this conflicting testimony in mind I have decided to review one hundred of these cases in which a complete physical and laboratory examination has been made and attempt to find out the present condition of these patients. This data covers a period from 1916 to the end of 1923, all of these patients being seen in the office at one time or another with the exception of two, one in the penitentiary and one in the hospital. This group could, therefore, with one exception, be called ambulatory. More than one hundred histories were reviewed, some of these could not be traced so their cases were dropped, but the number finally selected were the first hundred who either could be followed to the time of death or those who are still living and have been seen during the last six months.

The tracings on these patients varied from 3 to 28, the latter being made on a patient with myocardial degeneration which manifested itself in a pulsus alternans and an extrasystole of the ventricular type. The total number of tracings taken was 923.

The present condition of the heart rhythm of those who are still living and the cause of death of those who have died will be reported.

THE SIGNIFICANCE OF THE EXTRASYSTOLE.

Mackenzie(1) says, "I have watched hundreds of persons who have shown them (extrasystoles) for over twenty years. At first I did not know what to watch; then I realized the essential question was the relation of the extrasystole to heart failure. After I had recognized what the early signs of heart failure were, I applied the knowledge to finding out the prognostic significance of the extrasystole and after taking tens of thousands of observations, I realized they have no prognostic value."

Lewis(2) agrees with Mackenzie that extrasystoles, as such, may be disregarded and are of little significance.

Babcock(3) states that persistent ventricular extrasystole in the aged or in conjunction with valve lesions are of evil prognostic value.

Goodall(4) believes extrasystoles are unfavorable. They indicate hyper-irritability of the myocardium. They represent a definite stage in the physiologic process of fatigue and in the pathologic condition of inflammation, degeneration and toxemia. Auricular extrasystoles usually indicate definite myocardial degeneration.

Cowan and Ritchie(5) agree in general with Mackenzie but feel that in patients over forty when extrasystoles are not due to nervous or toxic causes should be considered as the earliest indications of coronary sclerosis. They regard auricular extrasystoles as more serious, for, out of 32 cases, 7 developed auricular fibrillation and 10 died within a period of two years.

---

*Read befroe the Elkhorn Valley Medical Society, Fremont, Nebr., February 14, 1924.

Barker[6] states that auricular extrasystoles are more serious than ventricular extrasystoles and that an extrasystole in hospital cases is an unfavorable prognostic sign. Of 117 hospital patients with extrasystoles 37.5 per cent died, this in comparison with 17 per cent deaths in all hospital heart cases irrespective of extrasystoles. His statistics, however, do not state what was the cause of death in these patients.

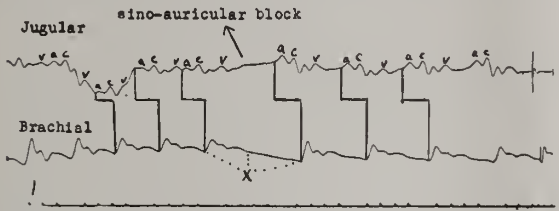


Figure 1. Sino-auricular block. Physiologic. X = silent period clinically.

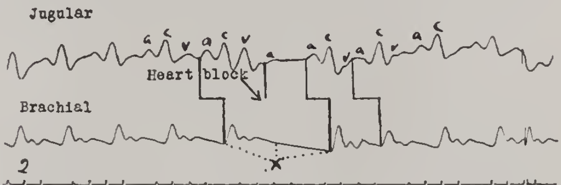


Figure 2. Missed beat (partial heart block). Pathologic. X = silent period clinically.

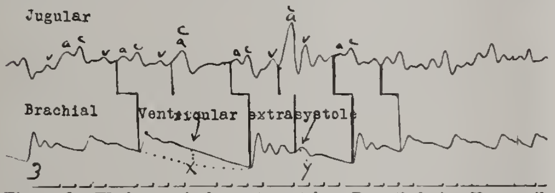


Figure 3. Weak ventricular extrasystole. Prepathologic. X = silent period clinically.

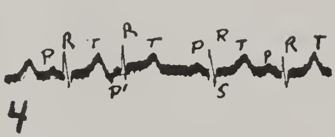


Figure 4. Auricular extrasystole.

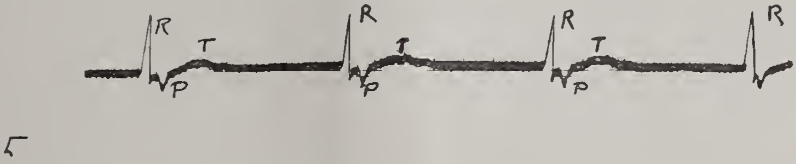


Figure 5. Nodal extrasystole. Ventricle is contracting before auricle.

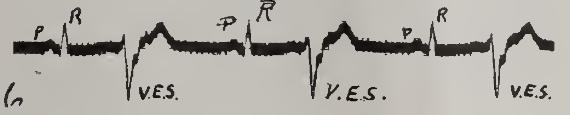


Figure 6. Ventricular extrasystole.

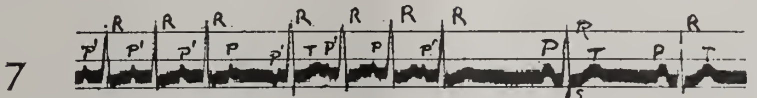


Figure 7. Auricular paroxysmal tachycardia. This is due to rapid multiple auricular extrasystoles.

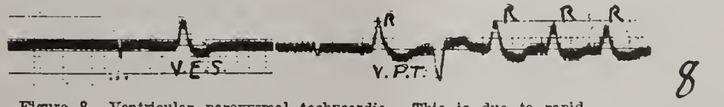


Figure 8. Ventricular paroxysmal tachycardia. This is due to rapid multiple extrasystoles.

MECHANISM OF THE HEART BEAT

This has been minutely described in a former paper so it will only be briefly considered at this time.

The complete beat of the heart consists in the contraction of the auricle and then the ventricle in orderly sequence. This is repeated about seventy times a minute. The wave of contraction starts in the upper part of the right auricle at the sino-auricular node and spreads throughout both auricles. This is the auricular systole. Some of these stimuli pass through the auriculo-ventricular bundle and its branches to each ventricle, resulting in the ventricular systole.

PROPERTIES OF THE MYOCARDIUM

The principal properties of the myocardium are tonicity, contractility, irritability, conductivity and rhythmicity. Changes in tonicity are recognizable by clinical means, by blood pressure instruments and at times by the roentgen ray, while change in the four latter properties are recognized often by clinical means and the polygraph, but many of these abnormalities are only accurately recognized through the employment of the electrocardiograph. The extrasystole develops only in the myocardium, thus the endocardium and the pericardium only enter indirectly into the subject of this paper, so little attention will be paid to them.

MECHANISM AND CLASSIFICATION OF EXTRASYSTOLES.

Extrasystoles are contractions of the heart which disturb the normal rhythm and are in response to impulses which originate in the myocardium outside the normal "pacemaker"—the sino-auricular node. These extra impulses require little time for preparation and are not of a rhythmic series as a rule. They are the result of hyperirritability of the myocardium or the conducting apparatus. The finding of the cause of this hyperirritability is the problem set for the examiner. Extrasystoles are divided into three classes, depending upon the point of origin.

1. Extrasystoles of ventricular origin. In this type the impulse arises in the ventricle, thus causing it to contract before the normal auricular impulse reaches it, but at times this extra charge may be liberated at the time of the normal ventricular contraction. When the ventricle is contracting from the ventricular stimulus it is in a refractory state and is not affected by that from the auricle. After the disturbance produced by the single premature beat, the ventricle rests until the next auricular impulse reaches it, consequently there is a diastole greater than the normal period. The period of disturbance is exactly equal to two complete cycles of the normal rhythm.

II. Extrasystoles of Auricular origin. When a premature impulse originates in the auricle, this organ contracts and the ventricle if not in the refractory period follows it. There is a disturbance of the rhythm in which both the auricle and ventricle beat prematurely. The premature contraction is followed by a long pause but the whole period of disturbance is not equivalent, as in the premature ventricular beat, to two full cycles of the normal rhythm.

III. Extrasystoles of Auriculo-ventricular bundle origin. In some cases an ectopic impulse originates in the auriculoventricular bundle or node and this results in the simultaneous contraction of the auricle and ventricle. In this condition either the auricle or ventricle or both contract prematurely.

METHOD OF EXAMINATION

The history of the patient is of very great importance and often one will find that a "flutter" ,"jerking", "grabbing", "stopping," "missing", "cramping", "pain," "catches breath" and many other descriptive terms are associated with sensations in the heart region which are later found to be due to extrasystoles. Oftentimes these are reported to have been noticed over a period covering a number of years. One patient, a physician, 66 years of age told me this "missing" of his heart had been present for about 25 years. Physicians had examined him during this period, some saying he would live only a few days while others believing it of no importance advised him to forget it. Of course, many times patients complain of symptoms in the heart region which are not due to heart abnormalities but to conditions outside the heart area, for example, gas in the stomach and, vice versa, stomach complaints may be due to cardiac pathology. One must know how much coffee, tobacco, alcohol and drugs are being consumed, whether worry or over-mental or physical strain may be a factor, if there are or have been any infections, no matter how small or extensive, and finally pain may point to the correct etiological factor.

A complete physical examination must be done in every case, with the idea in mind of uncovering any causative or associated pathology. Auscultation of the heart over a long period of time, especially when the breath is held as long as possible, will at times be rewarded by the finding of an extrasystole. One patient, who complained of "fluttering of the heart" was examined several times during the course of two years when at last an extrasystole was discovered. Smoking tobacco or drinking coffee, when the basic cause, will oftentimes bring out this irregularity when it cannot be otherwise discovered.

Laboratory methods having any bearing on the case should be employed. Routinely the blood pressure should be taken and the blood and urine should be examined. This will often bring many unlooked-for surprises. At times, one will necessarily use the x-ray, basal metabolism, vital capacity, cystoscope and other instruments which may clarify the situation. I believe in all these cases, to make an accurate definite diagnosis either the polygraph or the electrocardiograph must be used.

The first thing to know is the point of origin of the extrasystole, then one must search carefully for pathology in the heart and in other parts of the body. All possible extraneous causes must be carefully sought after.

By this method and this method alone do I believe the point of origin of the extrasystole can be accurately learned and can any pathologic heart condition or associated disease be properly uncovered.

FINDINGS IN 100 EXTRASYSTOLES

The ages varied from 11 to 62 years, the time the extrasystoles were present before I examined the patients varied from "not knowing it was present" to 25 years, this latter patient being a physician. The periods patients have been under observation have varied from 6 months to 8 years. Coffee, tea, cocoa, and tobacco seemed to have been the etiological factor in 21 cases, since the extrasystole disappeared after the withdrawal of these. In the following cases drugs seemed to have caused the extrasystole; aspirin 1, strychnine 2 and digitalis 3, for the rhythm returned to normal after stopping these drugs. Seven pregnant women developed extrasystoles which disappeared after confinement. Alcohol accounted for three, since extrasystole only developed after a "spree". Pathology in the heart and aorta was present in nine patients four of whom died from myocardial degeneration. Infections and toxemias outside the heart seemed to be responsible for 31 cases. The miscellaneous causes were as follows: hyperthyroidism 1, influenza 3, highly neurotic persons 4 and mental overwork 1. There were 14 patients in whom no pathology or other cause could be found. Females predominated there being 61 of these and 39 males. The origin of the extrasystoles was; the ventricle in 87, the auricle in 5 and the auriculo-ventricular bundle and node in 8.

The heart was enlarged in only 9 cases, 4 of these being due to dilatation in myocardial degeneration, 2 to aortic aneurysm with a subsequent cardiac dilatation and the other three were hypertrophied being due to aortic stenosis, aortic regurgitation and mitral stenosis.

RESULTS OF TREATMENT.

Normal rhythm was quickly restored after the withdrawal of the etiological factor in the 27 patients in whom the extrasystole was due to coffee, tea, cocoa, tobacco, aspirin, digitalis or strychnine. Several of these have at times attempted to take some of these substances, but this has always resulted in the return of the arrhythmia. In the seven cases developing during pregnancy, all have remained normal since confinement. One has been pregnant a second time but her heart remained normal throughout the pregnancy. The three alcoholics still develop arrhythmias after each prolonged "spree". The four patients with myocardial degeneration had extrasystoles until death intervened, the other five with heart and aortic pathology are still living and all have extrasystoles.

In the 31 cases with infections and toxemias outside the heart, 12 were restored to normal rhythm by removal of the infections, the other 19 have extrasystoles at varying intervals.

In the miscellaneous group the patient with hyperthyroidism was placed on quinine and ergot and after the return of the basal metabolism to normal, the arrhythmia disappeared. Of the three influenza patients two are normal and one has intermittent extrasystoles, in the four highly neurotic patients no change in the rhythm followed treatment, and in the one due to mental overwork rhythm has been restored.

In the 14 in whom no cause could be assigned, 6 are normal after administering potassium iodid and sodium bromid, while the other 8 are unchanged.

Thus in 100 cases of extrasystoles 56 have been restored to normal rhythm, while 40 have changed little and 4 have died.

ARE EXTRASYSTOLES PATHOLOGIC?

From intensive study of these 100 cases I am led to believe that an extrasystole is only a symptom of an irritable neuromyocardium and is not in itself pathologic although it may be present in heart disease. Examples of this in other parts of the body are; the headache after any mental shock; the rapid heart in nervousness; the irritable bowels and bladder during the manifestation of fear; the contraction of somatic muscles through self-consciousness; and blepharospasm like extrasystole is due to an intrinsic cause as hyperirritability of the eyelid, to extrinsic causes as strong light, to infection of the nearby tissue as the cornea, lens or retina, and it may be due to pathology in the eyelid.

Four of the 100 patients have died. The cause of these four deaths is unquestionably myocardial degeneration. The tonicity of the myocardium was restored by digitalis several times in each case, but the restoration of this was less perfect each time until finally there was no response. One had an auricular and three had ventricular extrasystoles. I cannot believe that the extrasystoles had anything to do with the heart failure. I believe with Bohan(8) that heart failure is principally due to loss of tonicity and the extrasystole is a manifestation of increased irritability of the myocardium.

In the 96 living, 5 are in serious or potentially serious condition. Of these, three have serious valvular disease and two are suffering with aortic aneurysm, while the myocardium is slowly losing its tonicity in all of them. All five of these respond poorly to exercise tests, showing dyspnea, rapid heart rate with slow return to normal and slow rise in blood pressure and rapid return. One of these has an auricular, one a bundle and three have ventricular extrasystoles. The pathologic condition in these cases is clear cut and the symptoms are easily accounted for.

One patient, a very nervous boy of 11 years, the only son of very nervous parents, has a rapid heart and has a poor exercise response. He has a general tremor and I believe is subnormal mentally. The extrasystole has been present two and a half years. One patient, who was gassed in France, has a mitral stenosis but shows no signs of heart failure at present. One woman with a mitral regurgitation, has two babies and shows no signs of myocardial degeneration.

The remainder, 88 in number, so far as I am capable of telling after careful examinations are not suffering from heart disease of any type. The valves are all normal, the hearts are normal in size, the responses to exercise tests are good, the pulse pressure is within the normal range and there is no capillary stasis. Seven of these, reported in a former paper(9), I have accepted as first class insurance risks.

After careful study of these cases I am led to believe with Mackenzie and Lewis. that an extrasystole is only a symptom of an increased irritability of the myocardium and that it has no prognostic value. At present I have no opinion as to the relative prognostic seriousness of auricular, bundle or ventricular extrasystoles. I believe that the real problem is:

1. Are there any signs of heart failure present?
2. Is there any disease of the myocardium?
3. Is there any abnormality elsewhere?
4. Are there any extraneous causes?

Then after learning the answers to these; remove all pathologic causes, if possible; exclude all extraneous factors; and change the environment, so as to eliminate all mental and physical overstrain.

THE ROLE OF THE CARDIOGRAPH IN THE DIAGNOSIS OF EXTRASYSTOLES

1. It shows the exact point of origin of the extrasystole.
2. It reveals when repeatedly employed, changes in the extrasystole and makes a permanent record for comparison.
3. It shows any change in the irritability, conduction, contraction and rhythm properties of the myocardium and, at times, the loss of tonicity.
4. It is the only method of differentiating between sino-auricular block, non-respiratory sinus arrythmias, partial heart block and weak extrasystoles of ventricular origin. The first two are physiologic, the third pathologic and the fourth a symptom. (Figures 1, 2 and 3).
5. It prevents the administration of cardiac drugs in physiologic arrhythmias which may resemble pathologic ones.

CONCLUSIONS

1. The extrasystole is a symptom of an irritable myocardium and is not in itself heart disease or a symptom of heart disease.
2. Extrasystoles may be due to disease in the heart itself, to disease in other parts of the body, to infections, to stimulants, to toxemias, to mental and physical strain, to over-eating, to pregnancy and to drugs of various types.
3. The principal problem is to find the cause of the extrasystole and to know the exact condition of the heart. To do this a complete, careful physical examination is necessary.

4. To eliminate the extrasystole, the cause must be removed.

5. To accurately locate the origin of the extrasystole and to differentiate it from other arrhythmias the use of cardiographic instruments is necessary.

6. The cardiograph makes a permanent record and shows any change which may take place in the rhythm, conduction, contraction or irritability of the myocardium.

7. Changes in tonicity of the myocardium can at times be recognized through the use of the electrocardiograph but usually we must depend upon clinical means to discover loss of tonicity.

8. Finally the accurate diagnosis of extrasystoles and the finding of etiological factors depend upon the proper employment and coordination of clinical, laboratory and mechanical means.

BIBLIOGRAPHY

1. Mackenzie, Sir James: Personal Communication.
2. Lewis, Sir Thomas: Clinical Disorders of the Heart Beat.
3. Babcock, R. H.: J. A. M. A. 1918, LXX, 355.
4. Strickland-Goodall, J.: New York M. J., CXV, 204.
5. Cowan-Ritchie: Diseases of the Heart, London, 1922, 110.
6. Barker, P. S.: Ann. Clin. Med. May, 1924, p. 369.
7. Smith, Arthur L.: The Value of the Cardiograph in Arrhythmias, Nebraska M. J., Jan., 1924, IX, 19-23.
8. Bohan, P. T.: Ann. Clin. Med. May, 1924, p. 365.
9. Smith, Arthur L.: The Value of the Cardiograph in Insurance Examinations, Med. Herald, Oct. 1923.

—904 Security Mutual Bldg.

RUPTURE OF THE SPLEEN*

J. F. Langdon, M. D., F. A. C. S., Omaha, Nebr.

Rupture of the spleen is not common. Our lack of knowledge of the part this structure plays in the human economy, makes the more interesting the problems concerned in the diagnosis and treatment of splenic diseases. In this connection I wish to report two cases coming under my observation in the past twelve months.

Case 1. Seen with Dr. Grier, Dec. 10th, 1923. The patient, a male, aged 6 years, gave the following history. Thirty-six hours before admission to the hospital was playing in a box car. In getting out of the car he fell to the ground below, a distance of about five feet. Says he fell on his "stomach" against a large cinder. He had very severe pain and was unable to walk. He was found by his parents and carried home, where his mother put him to bed. Dr. Grier was called about four or five hours after the injury. At that time the boy did not seem seriously sick. He complained of some pain in the upper abdomen and was tender in the upper left quadrant. There were no contusions or abrasions, nor was there any definite evidence of internal injury.

Twenty-four hours later Dr. Grier was again called. At this time there was rigidity of the upper abdomen. Patient was complaining of considerable pain and was very tender in the upper left quadrant. He was brought to the hospital. On admission temperature registered 100°, pulse 104, respiration 24. A small bowel movement was obtained with an enema. The nurse's record showed that during the night patient was restless, complaining of pain in the abdomen. At noon the following day temperature was 100.4°, pulse 130, respiration 32. There was general abdominal distention with marked rigidity in the upper left quadrant, and extreme tenderness over the splenic area. A diagnosis of probable rupture of the spleen was made and operation advised. Consent was not obtained till evening, approximately fifty-two hours from the time of injury.

Operation: A left rectus incision was made and spleen exposed. There was a moderate amount of free blood present. Hemorrhage was active. A three-cornered tear extending completely around the spleen was evident. A splenectomy was performed.

After Course: Patient made an uneventful recovery except for a stitch infection which delayed convalescence. The day following operation blood count showed a leukocytosis of 14,000. This gradually rose to 19,000 on the tenth day, after which time no count was made. During the same period the hemoglobin ranged from 70% to 80%, red blood cells from 3,800,000 to 4,500,000, the polymorphonuclears remained high ranging from 82% to 86% and the lymphocytes varied from 14% to 18%. Patient remained in hospital thirty-two days at which time he was discharged with wound healed and apparently in good health.

One week later Dr. Grier was again called. Patient was found to have a temperature of 101°, with a marked general lymphatic enlargement, the cervical and inguinal glands being particularly involved. He complained of a mild sore throat, which on examination showed slight redness but nothing more. By the following day the child was quite right and playing as usual, and the swelling in the glands to a great extent subsided.

Case 2. The patient, a male, aged 27 years, came under observation with the following history. Four days ago while unharnessing a team of mules, was kicked by one of them. He was struck over the left chest in front. The force of the blow hurled him back against the side of the barn and he fell to the ground. He suffered intense pain immediately, but after a few minutes was able, with a brother's assistance, to walk a short distance to the house. He lay down and shortly became weak, dizzy and nauseated. Says he broke out in a cold perspiration and thought he was dying. During the night he had severe pain and difficulty in breathing. A physician was called who gave him a hypodermic of morphine. He remained in bed all the next day, suffering considerable pain. This he said ran up into both shoulders, but was especially noticeable in the left. He entered the hospital four days after the injury. An examination at this time revealed a robust well nourished male, not apparently in great pain. There was slight discoloration over the 9th and 10th ribs anteriorly. There was marked abdominal distention and rigidity in upper left quadrant. Deep respiration produced pain in the lower left chest. There was extreme tenderness on pressure over the splenic area. Temperature was 99.4° and pulse 78. The x-ray report was as follows: Chest, left diaphragm higher than right, makes poor excursion. Right diaphragm makes good excursion. Both lung fields clear. Density at left base, seems to be under diaphragm, looks like fluid density, probably blood.

---

*Read before the Omaha-Douglas County Medical Society, January 13, 1925.

A diagnosis of subcapsular rupture of the spleen was made and conservative treatment followed. Patient was kept in bed, ice applied and gradually distention and pain were relieved. Tenderness was marked and persistent to the time of discharge from the hospital, fourteen days after the injury. No blood findings were recorded in this case.

ETIOLOGY

It is a fact worthy of notice that in the cases here reported there was practically no evidence of injury to the soft parts. This seems to be characteristic of most of these injuries. At first thought, because of the deep seated position of the spleen, one would imagine it safe from external injury. However, its anatomical location and structure make it liable and susceptible to sudden increase in intra-abdominal pressure. The spleen lies in relation with the under surface of the diaphragm which separates it from the 9th and 10th ribs. It is in close proximity to the ribs posteriorly, which tends to make a rather solid bed. Moreover, the elasticity of the ribs would, in the face of a violent blow cause considerable intra-abdominal pressure. Added to this is the fact that the spleen is very friable, its capsule very thin and its whole structure of very delicate nature. It is easily conceivable that a violent blow, especially over the lower ribs in front would exert a very great degree of pressure. In most of these cases the blow is received over the anterior aspect of the lower left chest, but not always however. Watson reports a case in which a man was struck across the back, with resulting rupture of spleen. Falls on the abdomen, blows, such as kicks by horses, crushing injuries, are the commoner etiological factors. Disease of the spleen itself predisposes to rupture. In the majority of cases, however, as far as I am able to learn, there has existed no pathological condition in the spleen itself. Indeed, a number of cases of spontaneous rupture are reported in which no pathology was evident. Metcalf and Fletcher report two such cases. It seems quite evident that a healthy spleen may rupture from slight or even no trauma at all. There is some evidence to show that a large spleen is more prone to injury. McCracken reports that rupture of the spleen is common in China. He states that nearly every Chinaman has a large spleen and he thinks this may be a predisposing factor.

SYMPTOMS

The symptoms are essentially those of intra-abdominal hemorrhage. There is pain in the upper left quadrant, usually of increasing intensity. This pain may be referred to the left shoulder, a symptom on which many writers lay much stress. In the cases here reported one complained of quite definite pain in the shoulder. In the other case no such complaint was made. There is more or less rigidity present depending on the severity of the injury. This is most marked in the upper left quadrant. Extreme tenderness over the splenic area is constant. Many of these cases are in shock for some hours after the injury. Later there is an elevation of temperature and considerable elevation of pulse due to peritoneal irritation. The patient quite regularly experiences difficulty in breathing. His respirations are short and painful. Nausea and vomiting are commonly present. Serious symptoms may be delayed as in Case II. This boy did not present symptoms of any severity till thirty-six hours after the injury. Taylor reports a case in which, following an injury, alarming symptoms were not present till the 4th day, when abdominal pain became acute, temperature 101°, pulse 120 and abdomen greatly distended. Two days later patient suddenly collapsed. Laparotomy revealed a ruptured spleen. This no doubt is the result of delayed hemorrhage which may be due to walling off by the omentum, or to subcapsular hemorrhage, the capsule later rupturing with bleeding into the peritoneal cavity.

DIAGNOSIS

This often presents many difficulties.

With a history of severe injury to the upper left abdomen or lower left chest, accompanied by muscular rigidity, tenderness and the signs of intra-peritoneal hemorrhage, the diagnosis can be made with confidence. While in a typical case the signs and symptoms are referable to the upper left quadrant, yet if the injury is severe and the bleeding extensive, general abdominal rigidity and distension may make localization of the lesion impossible. From the standpoint of treatment however, this is not so important, since the case assumes the aspect of the acute abdomen, and laparotmy, therefore, is indicated. The history of the injury we believe to be of considerable value. In the majority of cases the injury is a violent one and is received over the splenic area. The patient usually is in violent pain for a time at least immediately following the injury. The behavior of the pulse is an important sign. A continued rising pulse denotes peritoneal irritation and continued hemorrhage. When the injury is accompanied by crushing of the chest with fractured ribs, the diagnosis becomes more difficult, as the symptoms may easily be ascribed to the chest injury and the splenic lesion overlooked. In doubtful cases where the symptoms are not threatening, careful observation for a time will usually lead to a correct diagnosis. Where the signs and symptoms are severe exploratory laparotomy will often be necessary to establish the diagnosis.

TREATMENT

Splenectomy is the operation of choice in the majority of cases. Suture and tampon are of uncertain value. The danger of secondary hemorrhage makes such procedures inadvisable. Even though secondary bleeding does not take place, the recovery is slow and infection is liable to occur. Conservative surgery is to be followed only when the damage to the organ is slight, or the condition of the patient precludes more radical measures. In the absence of severe symptoms operation is not always indicated, as a subcapsular rupture may heal spontaneously. The diagnosis of such cases is, of course, difficult of proof. The diagnosis in Case II is open to some doubt, though with the history, clinical and x-ray findings, such a diagnosis we believe, was reasonably certain. Increasing severity of symptoms, continued fever, muscular rigidity and particularly increasing rapid pulse rate, calls for immediate operation. In no case should surgical treatment be undertaken in the face of shock.

AFTER EFFECTS OF SPLENECTOMY

An accurate explanation of the phenomena observed after splenectomy is not possible in view of the present lack of knowledge of splenic function. The spleen has no external secretion, nor, as far as is known, has it any internal secretion. Together with the bone marrow, lymph glands, hemolymph glands and accessory spleens it forms the so-called hematopoietic system. It also is associated in function with the liver. It receives its blood supply from the celiac axis by way of the splenic artery. On entering the spleen this artery divides in numerous small branches. Along their course the malpighian follicles are developed, and it is here that the lymphocytes are supposedly formed. As the vessels become smaller they break up into minute capillaries which pour the blood directly into the splenic pulp.

The pulp is a sponge-like structure which contains in its meshes broken down red blood cells, pigment, lymphoid tissue and large polynuclear cells called splenic cells. It is in the pulp that the blood undergoes alteration before being collected by the veins, the worn-out red blood cells being destroyed largely by the splenic cells, probably by a process of phagocytosis.

The spleen also is credited with the power of removing microorganisms from the blood, the theory being that the spleen acts as a filter, abstracting the bacteria toxins from the blood, and sending what it can not destroy itself to the liver for further action.

Of greatest interest, however, especially in connection with our cases, is the theory of the supposed regulating influence of the spleen on the blood producing organs. We can probably best consider this by noting the changes in the blood in Case I. The day following operation there was a decided increase in the white count. This increased from 14,000 on the second day to 19,000 on the tenth day. Both the polynuclears and lymphocytes were increased, the polynuclear count being very high for a child of this age. There was evidently a sudden stimulation to the bone marrow, signifying that in some manner the spleen must exert a check on the activity of this structure. In nearly all cases of ruptured spleen where a count has been made a high white count has been recorded. This would tend to prove that the spleen exercises a control on leucocytic production, which, lost with splenectomy, allows the bone marrow to run away with itself, so to speak, with a resulting over production of polys.

A blood count made on May 26th, five months after operation, shows considerable change in the picture. The white cell count was 12,000, but instead of leucocytosis we found a lymphocytosis. The count by Dr. Russum showed 60% small lymphocytes. While in children the lymphocyte count is normally increased, yet at his age, 6 years, 60% is high.

In view of the lymphocyte findings, this patient has clinically what we would expect to find, a general lymphatic enlargement. This first developed five weeks after the operation, accompanied, it is true, by a sore throat. However, the cervical glands at that time were markedly enlarged out of all proportion to the slight congestion in the throat. This together with the fact that all the other glands, axillary, epitrochlear and inguinal were involved and were still palpable five months later, furnishes conclusive evidence, we believe, of the compensating action of the lymphatic system.

The red blood destroying function of the spleen is, after splenectomy, carried on by the hemolymph glands located in the retroperitoneal tissue and in the region of the cervical spine. These glands resemble the spleen in structure. They are dark red in color and after splenectomy enlarge and carry on the process of destroying the erythrocytes. Accessory spleens also, when present, enlarge and carry on the same function. In our case no marked change was evident in the red cell count. The day following operation count showed 3,800,000, and on the 10th day 4,500,000. Five months later the count showed 4,300,000. Johnstone working in the Mayo clinic found that in animals following splenectomy, about 50% of cases showed sudden marked increase in the reds, while in the other 50% the increase was slow.

A study of splenic function is very facinating, but in spite of all the work that has been done along that line, considerable confusion exists as to its true place in the physiology of the body. In conclusion we may say:

1. A healthy spleen may rupture from little or no trauma, but in the majority of cases severe blows over the lower left chest are the etiological factor.

2. The cardinal symptoms are those of intra-abdominal hemorrhage.

3. Splenectomy is usually the operation of choice.

4. That provided there are no complications, a splenectomized individual suffers no permanent ill effects from the loss of his spleen.

BIBLIOGRAPHY

1. Metcalf and Fletcher, Ann. Surgery, Feb. 1922, P. 186.

2. Taylor, Brit. J. Surgery, March 1924, P. 962.

3. Pheiffer and Smith, Ann. Surgery, 801, 562, Oct. 1924.

4. Moynihan, Brit. J. Surgery, January 1921, P. 307.

5. Mayo, W. J., Archives of Surgery, March 1921, P. 185.

6. Kahn, Am. J. Med. S. Vol. CLXV, P. 214.

7. Watson, South. Med. Journal, 16, 985, Dec. 1921.

DISCUSSION

B. B. DAVIS, M. D.: They say a man can always talk better about something he knows least of, as he is not limited by facts. My limited experience makes me feel that I ought to make a good talk.

I feel very much pleased by this paper. It is very interesting, and especially I want to recommend the final summing up. I have been more and more impressed in my own experience and also from the literature that I have read that the pathologic spleen is ruptured quite often. Bryan (not Williams Jennings, but some other Bryan), some years ago reported thirty-eight cases of spleens that had spontaneously ruptured during the course or at the close of typhoid fever. A good many cases of malarial spleen causing rupture have been reported.

In the ordinary cases of traumatic ruptured spleen, the normal spleen being ruptured, occurs in men as they are more exposed to severe injury. This trauma is often so severe that other organs are also ruptured, especially the stomach, liver and pancreas may all be involved with general trauma.

In regard to the x-ray diagnosis: From all I can see and from my own little experience, I do not believe we make many positive diagnoses of ruptured spleen before an exploratory is made. In Dr. Langdon's case it was so well worked out that he had a very good idea as to the diagnosis, but in the great majority of these cases the symptoms are such that we know that a bad injury has occurred, injury with hemorrhage, but not until incision is made are we certain that it is the spleen.The x-ray is helpful, especially if examined with the fluoroscope where a good deal can be determined about the motions of the diaphragm and in that way get a fair idea of the changes at the splenic region. An important finding is to determine the presence of fluid in the abdominal cavity. Change of posture is also helpful to a surprising degree. If he is in semi-Fowler and the lower part of abdomen is changed especially, even though only turned to right side, dullness continues in region of the spleen.

The Sub-Capsular Type: My own idea is that most of these cases are of the sub-capsular type.

Oftentimes there is a good deal of difference in the strength of the capsule. When an injury to the spleen has occurred with a lot of hemorrhage the capsule gives away. Symptoms are then not very severe, and later if the tension has been so great as to rupture the capsule you get free blood in the abdominal cavity.

Treatment: I believe most of these spleens should be operated on and when an operation is done I think as a general rule splenectomy is best. In case of injury to the spleen in the shape of a cut rather than much laceration probably suture might do. In looking up the records I find that where the spleen is not so badly injured and is not taken out but sutured, if hemorrhage is going on it is almost certain to produce another rupture.

Tamponading: When the injury is so severe that you only want to stop the hemorrhage and get out as quickly as possible then tamponading might save the patient's lfie. Aside from this usage I do not think it is any good. If injury is slight it is best to do a suture. As a general rule I think splenectomy is the advisable thing.

In conclusion I would like to ask if in the splenectomies you have done the patient has complained of pain in the long bones after operation. We know that this throws additional work on the bone marrow. I have seen a number of cases where the patient would complain of this, would tell you about it even before you had asked him about it.

DR. FRANCIS W. HEAGEY: I have been considerably interested in these reports of Drs. Langdon and Davis. In 1911 in Panama I saw on an average of thirty-two cases of malaria a day with clinically enlarged spleens. During four months in the Canal Zone I do not remember of seeing one ruptured spleen.

Some years ago I had a patient sent in from the country with a diagnosis of acute splenitis having been made by the country doctor. Going over him thoroughly we made a diagnosis of pneumonia. He had a chest full of fluid, he was x-rayed and our diagnosis confirmed. He also complained of some abdominal symptoms. In six weeks the patient died and autopsy showed that we were right as far as the chest was concerned but where the spleen had been was an abscess cavity and the spleen was floating around in this abscess cavity. The country doctor had arrived at the right diagnosis, seeing the patient before we did, and the chest condition was secondary.

As far as the diagnosis is concerned, from a medical standpoint I agree with both surgeons in making a diagnosis of acute abdomen and would advise an exploration in the presence of history of trauma, fluid in the abdomen and signs of collapse.

DR. J. E. SUMMERS: On two occasions where I have tamponaded the spleen, one being last year when a little boy was brought to the hospital, the diagnosis being so certain that the nurses made a diagnosis of ruptured spleen, which was confirmed by immediate incision, the spleen was badly torn, sutured and tamponaded and the boy recovered. The other case was that of a wound in the spleen by a No. 38 calibre bullet, the spleen was badly torn, I sutured and tamponaded and he recovered. I recall another case where a splenectomy was performed, made a good recovery and came back two weeks later with an acute adenitis, glands in the groin and glands in general were enlarged but later disappeared.

I believe in immediate operation. You do not always know that the spleen is ruptured but you know something serious has happened and should go in and get it immediately. I recall a case brought in from Valley by Dr. J. C. Agee, in which the spleen was removed and patient died. The jerking up in the ride from Valley, the length of time after the injury, together with what I did, I believe was responsible for the death. If he had been operated immediately I think his life might have been saved.

Tamponading depends somewhat on how you do it. If you use a round needle, not tying sutures too tight, use catgut and are careful in your work I think you can control the hemorrhage. Of course, it depends somewhat on the nature of the injury.

How to make Incision: The Bevin incision is quite right for the removal of a large spleen but a rectus incision to remove a spleen not greatly enlarged does not give one room and I am more in favor of a transverse incision or an incision at right angles to a rectus incision. It gives you more direct exposure. If the spleen is way down deep with a lot of blood around it, it is pretty hard to see what you are doing. I think that proper exposure is very necessary.

DR. A. F. JONAS: I think there are certain mechanisms in the production of laceration of the spleen which must be considered. This same principle can be applied to laceration of viscus in any other part of the abdomen. Injury to viscus depends on whether or not there is a cone between the viscus and the bony protuberance such as the spine. If injury occurs and the stomach is empty there will probably be no laceration. If it is partly filled and a blow is struck between a filled stomach and a bony protuberance rupture is much more likely to occur. This should be taken into consideration.

I recall a case of a man falling two stories, during the construction of a building, falling across the joist on the floor below and landing on his side. There is no question but that the spleen was caught between the blow on abdomen and the spine. The abdomen was opened and a badly torn spleen was taken out.

Then, there is the differential diagnosis between laceration of kidney and laceration of spleen. If the kidney is lacerated there is usually blood in the urine. I had a case of a man struck under the 12th rib by being kicked by a horse. He had a mass in the right side of the abdomen and withdrawing urine from bladder found it to contain blood. An incision was made over the left kidney and found the kidney badly lacerated. The peritoneum was also opened and a ruptured spleen was found. The kidney was taken out and the spleen tamponaded and the patient recovered.

In the event of severe injury to the abdomen and the diagnosis is not clear make an exploratory incision.

DR. J. F. LANGDON, (Closing): There is no doubt that the diagnosis of these cases is difficult as Dr. Davis said. Though I strongly suspected ruptured spleen, the incision was exploratory. No doubt a subcostal incision as mentioned by Dr. Summers would be better if one were sure of his diagnosis.

Dr. Davis' question in regard to pain in the long bones I cannot answer. This finding was not present in these cases nor have I seen mention of it in the literature. It is very interesting and I shall look for it in the future.

In reference to Dr. Heagey's mention of malaria in Panama, I recently read a report which stated that in Panama out of thirty thousand (30,000) cases of malaria only three cases of ruptured spleen were recorded.

I am very much interested in Dr. Summer's success in tamponading, however I believe that this procedure would not be indicated in the majority of cases.

I certainly agree to Dr. Jonas' statement as to the necessity of differentiating this condition from ruptured kidney. I have not seen many ruptured kidneys but I do not believe there would be the marked abdominal rigidity. In this case there was no blood in the urine and marked abdominal rigidity was present.

ILEUS

V. V. Smrha, M. D., Milligan, Nebr.

Ileus is a symptom complex, or a syndrome, brought about by many varying anatomic and physiologic conditions of the body and manifested by symptoms of abdominal pain, nausea and vomiting, and an inability of the intestinal contents to move forward, producing obstipation. To these basic symptoms others attach themselves, varying somewhat as the conditions producing them vary, and also in the sequence with which they appear.

For convenience of description, ileus may first be classified into paralytic ileus and non-paralytic, or mechanical, ileus. Paralytic ileus may be subdivided into dynamic and adynamic ileus. Dynamic ileus is produced when by stimulation of the intestinal musculature, the gut is in a state of spastic contraction, i. e., in a tonic spasm, in some part of its extent. Dynamic ileus has two main causes, namely, lead poisoning and tyrotoxicon, or milk, poisoning. Adynamic ileus results from a muscular paralysis of the intestine, the bowel failing to contract, thus lacking its peristaltic action, and producing stasis of the bowel contents. This form of ileus is produced either directly or indirectly by the action of lesions on the nerves of the intestine, either centric or visceral. This is the form produced so frequently as a sequence of operations, particularly abdominal ones, and especially those on the mesentery. It often follows afferent nerve lesions of the cord, especially those of the dorsal region. It is frequently due to reflex causes such as hepatic and renal calculus colic; ovarian, or testicular compressions; and pleuric, diaphragmatic pneumonia. It may be produced by sepsis accompanying either local or general peritonitis, embolism or thrombosis of either the afferent or efferent bloodvessels of the intestines. It is an accompaniment of uremia, and may be due to the prolonged use of drugs.

Mechanical ileus is not paralytic in its incipiency and depends on some mechanical cause or anatomical defect for its occurrence. First among these various causes stand the hernias. These hernias may be classified as those that occur through the abdominal parietal walls, external hernias; and those that occur through the peritoneum only, these being classed as internal hernias.

The external hernias are named after the locations where they occur, as inguinal, femoral, umbilical, and ventral. Internal hernias are also thus classed, as diaphragmatic, inguinal, umbilical, sigmoidal, through the foramen of Winslow, and as occurring at the space of Trietz's triangle, at the duodenojejunal angle. Various peritoneal pockets may be formed and hernias protruded through them, or rather into them. Adhesive bands often bind the intestines together as to shut off the lumen of the bowel, or else produce kinks in the intestine that shut off their caliber by pressure or by kinking. Diverticula may do the same thing as may also twists of the bowel itself about its mesentery, producing a condition known as volvulus. If a part of the bowel gets invaginated into another part, producing a condition known as intussusception, the bowel may get occluded with like result, stoppage of the intestinal contents. Sometimes the occlusion may be but partial and small amounts of fecal matter pass by the obstruction. Neoplasms of the bowel wall itself, or of organs in the neighborhood, may produce enough pressure upon the intestine to shut off its lumen. Cicatricial contractions, following ulcerations, may limit the lumen of the bowel, fecal impactions and foreign bodies may do the same. All these multitudinous conditions are followed by similar symptoms and the condition produced by them is what is known as ileus.

Having reviewed the causes of ileus, we

find that the main thing inducing this condition is the inability of the bowel contents to move in the normal direction so that the bowel may empty itself, either because there is lack of peristalsis or because some obstruction is present that does not allow of the bowel remaining patulous nor the contents to move analward.

Much work has been done upon the study of the cause of death from ileus. It does not take many days for the condition to produce death if unrelieved, but much is lacking yet to give us a proper conception of the pathological physiology of the trouble, as well as the best means of overcoming the same. There is much more to the trouble than mere obstipation. One may be obstipated for a long time if other conditions remain normal, and the condition of ileus will not obtain. With proper attention a patient with obstipation as the only apparent symptom, may live a long time in comparative comfort. But add something more to the obstipation which makes itself manifest to us with pain, nausea and vomiting, and we get a syndrome that bespeaks disaster unless something is done pretty early to right matters. It is this missing link in the cause of ileus that needs to be discovered and a sure means found for overcoming it.

What the real cause of death from ileus is remains a mooted question. Many hold it to be due to toxemia from the absorbed poisons derived from the intestinal contents. We well know, however, that the osmotic current is almost entirely in the other direction, i. e., from the body tissues into the intestine, so that the toxemia thus to be produced is still questionable. If this proposition were true, that the absorption of intestinal poisons produces death, one would have a right to suppose that more poisons would be absorbed from a long length of bowel than from a short one; yet we know that the higher up toward the stomach the obstruction occurs, the sooner does death supervene. Such a cause might more readily be accepted in conditions of paralytic ileus due to diffuse peritonitis or to a strangulation of the bowel producing a septicemia from germ proliferation, which, however, is different than poisoning from the toxins of the intestinal contents.

The following theories have also been advanced, but they all lack something to make them conclusive. Draper says that the duodenum secretes a toxic substance which if absorbed causes death in twenty-four hours, but if it passes onward into the jejunum it becomes neutralized or detoxicated. Whipple has a similar theory about any occluded loop of the intestine. The secretion from such a loop, filtered, heated, and injected into healthy dogs produces low blood pressure, copious serous discharges from the bowel, and death, with extreme splanchnic engorgement. Hartwell and Haguet disprove the above theories. They prove that death may be produced without bacterial invasion either into the peritoneum, blood, liver, or spleen. Clairmont and Ranzl demonstrated that absorption from the proximal bowel was early suspended, ceasing entirely for potassium iodide in fifteen hours. McLean and Andrews transfused blood of ileus dogs just before death and also soon thereafter into healthy dogs, to the extent of 10% of the body weight of the latter without any bad effects. Brann and Borattan claim that the cause of death may be traced to a disturbance of the nerve plexuses of Auerbach and Meisner, resulting in dehydrating the body tissues producing a stagnation of blood in the splanchnic area and anemia of the brain. Hartwell and Hoguet proved that dehydration was a factor. By supplying normal salt solution subcutaneously to the amount of the fluid thrown off by vomiting, they kept experimental animals alive, though they had ileus, to beyond three weeks, and could have even longer. These were the conclusions experimentors arrived at up to very recent times. If there has been anything newer, I am not acquainted with it, and abstractors at the Surgeon-General's office have not reported it.

I am in no position to bring out any theory of my own, but I do wish to put some questions to our physiological experimenters. With the work now being done upon the internal secretions of the pancreas and upon the study of diabetes mellitus, facts have been forthcoming that may even bear a light upon the former question. For instance, an overdose of insulin produces shock, low blood pressure, and some of the conditions that we observe in ileus. The question is whether obstruction may not have a reflex action upon the islands of Langerhans as to produce an overactivity of these secreting glands which by producing a lowering of the blood sugar content, if such is brought about, might not be one of the causes of death. We know that there is an acidosis in ileus and that glucose and alkalis help to ward off these symptoms. Might not they help to overcome the conditions producing death in ileus and tide the patient over the time necessary in overcoming the intestinal obstruction? Might not such a reason explain the earlier death when the obstruction is high by reason of the fact that high obstructions are more stimulating to the pancreas? Study of the sugar contents of the blood in cases of ileus would demonstrate how near this idea may be correct.

But whatever the cause of death from ileus, it is up to the doctor to do what best he may to overcome or cure the condition, and to save the patient. Were only one line of treatment successful, it were easy to know what to do. But one line of treatment does not suffice in all cases. Knowing that ileus so frequently follows surgical operations on the abdomen, we, of course, naturally hesitate to operate the very first thing. We must needs first find out what the cause of the ileus is. Surgery is the only relief in mechanical ileus and, therefore, it behooves us to be able to recognize such cases. It is also the treatment due to a strangulated omentum, but to operate on a case of paralytic ileus, knowing such paralysis is frequently due to operations would be folly.

Treatment, then, must depend upon a correct diagnosis and when a doubt exists as to the cause of the ileus, operation is permissible after other means have been unsuccessfully tried for its relief. Operation is permissable at times to cinch a diagnosis and avoid losing valuable time, but the signs should point against a possibility of its being a paralytic ileus pure and simple. Sometimes the diagnosis of the cause is easy to arrive at, as in cases of external hernia where the same is visible, but becomes most difficult when due to internal causes hard to define.

To properly arrive at a true diagnosis all the available signs must be considered. The history of the case and the sequence of the occurrence of the symptoms bear heavily upon the case. What has been the previous history? Has there been operations, injuries, or constipation, or colic of any kind, or digestive disturbances, uremic symptoms, or poisoning from either lead or milk or its products? Was the present onset sudden, or gradual, and what is the present condition of the patient? Under present condition of the patient, we may classify the symptoms of pain, tenderness, nausea, vomiting, pulse, temperature, and collapse.

Ordinarily it is easy to decide that a patient is suffering from an acute obstruction, the difficulty lies in determining the cause of the obstruction. Given the characteristic symptoms of acute obstruction with no visible cause apparent, such as hernia, uremia, pneumonia, etc., we must attempt to locate the region at which the obstruction occurs, locating, if possible, the most tender point, determining at which location peristalsis and borborygmus cease; examining for localized areas of tympanities, areas of abdominal rigidity, tumors; and determining the nature of the pain — whether continuous or intermittent, or spasmodic, and its duration and degree; whether nausea is continuous and when it, and vomiting, began; the frequency and persistency of the vomiting and the character of the vomitus. Did the initial vomiting cease early and, was it renewed later.

The pulse serves as a good guide in estimating the occurrence of some cases of ileus, particularly those due to pneumonia, appendicitis, peritonitis, and embolism, both by its rate and by its quality. Temperature also serves as a guide in including or excluding certain types of ileus. Collapse is a symptom and may occur early, or primarily, or again secondarily. The face usually bears an appearance of anxiety and suffering and the patient often assumes a position that relieves the tension on the abdominal contents. The skin, in the early stages is cold and moist, clammy, due to the shock; but as dehydration comes on, it gets dry, harsh, wrinkled and drawn, the appearance being described as Hippocratic facies.

Having gone over the signs and symptoms in general, we may take them up in particular and in their various combinations as they relate to the different classes, or types, of ileus.

First, mechanical ileus is distinguished from paralytic ileus by the presence of peristalsis which is often easily visible through the abdominal wall or which may be recognized either by palpation or by auscultation as borborygmus. The symptoms, too, offer aid in the localization of the trouble. Sometimes borborygmi may be so loud as to be heard by the unaided ear, at other times they can only be distinguished by use of the stethoscope. These are early differentiating signs and they disappear when peristalsis of the bowel ceases in mechanical ileus which occurs either from an exhaustion of the muscle fibers of the gut or from nerve exhaustion, and at other times from muscle and nerve paralysis due to inflammation set up in the peritoneum. Should the patient be seen at this later period these signs of bowel motion are absent and then the history of the onset and the early stage must be relied upon to tell whether these signs had been present. All such cases of mechanical obstructions with paralysis added are operable and no time should be lost in giving that relief. These cases are all desperate and need instant relief to survive.

Appendicitis is to be recognized by its position and by the early rise in temperature. There is no prolonged initial vomiting as there is in ileus unless this latter complex itself follows upon the appendiceal inflammation. Right diaphragmatic pleuro-pneumonia must be distinguished here from both an appendicitis and from an ileus because it, too, has an early rise in temperature. Careful examination to determine whether or not friction rubs are present over the area of the lower right lung, whether breath sounds are absent and whether signs of lung consolidation are present, serve to differentiate it. This at times is difficult to do as the cough is much suppressed in such cases and the pneumonic areas may be deeply seated. A sudden pain, a rapid increase in pulse rate, and an early collapse bespeak for mesenteric embolism, especially in a patient known to have chronic endocarditis. An embolism passing through the heart produces a feeling of impending death, quite typical of this condition. Thrombosis of the portal vein is much more difficult to diagnose. It has a slower onset than does embolism of the mesenteric arteries. There is usually an early elevation of temperature and the spleen is palpable. Pericolicystitis producing ileus usually gives an antecedent history of biliary trouble. Uremia gives a history of a prior renal disturbance and albumen and casts are found in the urine and the breath has the peculiar odor characteristic of the trouble. Ileus from lead poisoning gives a history of the patient as a worker with lead or of having drunk of beverages passing through lead pipes. The gum margins show the lead line.

In the line of treatment nothing new has been advanced that promises better results than were formerly gotten, the same drugs and the same procedures are still in use. Spinal anesthesia is being tried in paralytic ileus as something new, without much encouragement; atropine, pysostigmine, and pituitary extract also have their advocates, the former drugs for their action on the nerves of the intestine and the latter for its direct muscular effect upon unstriated muscle fibers. Drainage of the bowel above the point of the obstruction, and rectal injections of alkalies and glucose are rational in avoiding acidosis and at times give results. From the nature of the case, it would seem better not to attempt using an enterostomy tube for purposes of feeding or for supplying water leaving it simply to serve for carrying off the fecal matter from the bowel, making use of the rectum for the former purposes. There is still much room for study of this disease and its treatment.

MODERN ASPECTS OF NUTRITION

I. IS INSTINCT A SAFE GUIDE TO NUTRITION?

Victor E. Levine, M. A., Ph. D.,
Professor of Biological Chemistry and Nutrition, College of Medicine, Creighton University, Omaha, Nebraska.

INTRODUCTION

The age in which we live marks the beginning of many departures from the past. It is an age in which more and more attention is being focused upon the individual human being. Civilization is entering upon a period of humanization. This tendency is well marked in many lines of endeavor but it is especially to be noted in science. Heretofore science concerned itself mainly with such branches more or less of an impersonal nature, as astronomy, geology and mathematics. Even chemistry and physics occupied the attention of the chemist and the physicist for the sake of these sciences alone. It was a period of science for the sake of science and there was a marked differentiation in so-called pure science and in applied science. Today even pure science is turning sharply its worthwhile efforts in the direction of applications mankind can make from its marvelous findings.

We are beginning to realize that the proper study of mankind is the human being, just as in biology the study of the cell is regarded as the key opening into the knowledge of the workings of the complex biologic organism. There is more or less a feeling that all useless science is an empty boast. The tendency towards the direct application of science to the problems and the welfare of the human being constitutes, indeed, a great advance in our mode of thinking. It is this change in viewpoint, the directing of our effort toward the betterment of the individual, towards the development of a higher type of human being that has brought forth great progress in such sciences as economics, psychology, anthropology, sociology, and such sciences as preventive medicine which concerns itself with the health of individuals, of communities and of nations. The greatest scientific achievement of the age is not the automobile or the movie or the aeroplane or even the radio. It is the saving, thanks to the progress in preventive medicine, of the lives of millions of our most precious possessions—our children.

When men of science turned their guns upon the individual they were much surprised to find that they lacked even the elementary knowledge of some of the most essential things that concerned him and the things nearest him. They realized but too well that in the past they looked for gold in fields far away and that the advice of Socrates: "Know Thyself" was more honored in words than in the actual observance. That lack of knowledge was very apparent in reference to nutrition, that is, in reference to the science of food and feeding. Experts in this particular field of public health were much surprised themselves to find that most of our knowledge relative to nutrition was more or less handed down to us in a traditional way and that a good deal of that knowledge was fundamentally wrong, being based upon opinion, which experimental facts and the experience of the race could not justify.

The series of short papers, the first of which is now given, has for its purpose the presentation in a simple way of all the up-to-date facts and principles concerning nutrition in health and in disease. We are fully aware that man does not live by bread alone and that he does not live in order to eat, but at the same time we must realize that our bodies are what we put into them and that a great many ills, minor and also major, depend upon dietary indiscretion or some dietary insufficiency. These we shall discuss at some later date.

Even the poet recognizes the importance of nutrition. Take Byron, for example, who, in his poem "Don Juan", proclaims:

"All human history attests
That happiness for man—the hungry sinner,
Since Eve ate apples, much depends on dinner."

Nor is Byron the only one outside of scientists who realizes the value of nutrition. Owen Meredith, although a little gloomy about friendship and poetry and music and art, places cooking and dining upon quite a high pedestal. Hear his words:

"We may live without poetry, music and art;
We may live without conscience, and live without art;
We may live without friends, we may live without books;
But civilized man cannot live without cooks.

He may live without books—what is knowledge but grieving?
He may live without hope—what is hope but deceiving?
He may live without love—what is passion but pining?
But where is the man that can live without dining?"

IS INSTINCT A SAFE GUIDE TO NUTRITION?

We have just pointed out the fact that modern scientific research has for its ulterior and highest motive the improvement of the race through the individual human being. Heretofore civilization focused its efforts upon building through the development of institutions. The individual as such was not concerned in the plan. That this type of civilization has much in it to be regretted is best expressed in the language of Edwin Markham, the Abraham Lincoln of American poetry:

"We are all blind until we see
That, in the human plan
Nothing is worth the making, if
It does not make the man;
Why build these cities glorious
If man unbuilded goes?
In vain we build the world unless
The builder also grows."

This turning of the limelight upon the human being as the important building stone of society has resulted in remarkable progress and new viewpoints in the subjects concerning him, such as psychology, sociology and public health or hygiene, of which nutrition is a part.

There was a time when nobody even thought in terms of health. Pain or fear drove many a person to the nearest physician for relief. He became a patient and there ended his responsibility. Modern humanized science has made us realize the extreme value of the age-old, half-accepted, half-rejected idea that an ounce of prevention is better than a pound of cure.

Many of us will ask the question why worry about nutrition at all? Does not instinct guide us through appetite into the proper choice of food? So we all believed, but modern science has taught us that while instincts preserve us from a great many dangers and pitfalls they surely do not preserve us from ignorance and do not prevent us from loading our systems with foods improper for growth or for maintenance of health and vigor. A quotation from a poem will bear out this point in a rather humorous way:

> " 'Tis not her coldness, father,
> That chills my laboring breast,
> It's that confounded cucumber
> I've ate and can't digest."

One of the greatest advances in modern nutrition lies in a realization of the fact that instinct or appetite is not a guide to proper feeding. Often it is taste, most often it is habit. As for taste, the professional cook can so pepper and salt and season an ancient steak as to give it the appearance and flavor of youth. How often do you read in the daily newspaper of people dying of food poisoning resulting from a carefully prepared meal of which they partook at some social dinner or in some very beautiful dining room of a modern hotel?

Strange to say, not instinct but habit is the most important factor in appetite. We like the foods which we have been accustomed to from early years. We rave about the kind that mother used to make. The Irish like their potatoes; the Italians, their macaroni; the Scotch, their oatmeal; Mexicans, their chili con carne. In the southern states people like bread made of cornmeal. Those who grow up on corn-bread learn to like it. During the great war the French people could not accustom themselves to eat corn even under the pressure of lack of food.

The Chinese and Japanese prefer rice to wheat as a food grain. They seem to like polished rice even better than unpolished rice. We know that polished rice is injurious to health. Instinct should have demanded unpolished rice, since the polished grain leads to a very serious and even fatal disease called beri-beri.

We all know that carbohydrates, that is sugars and starches, are very important to our diet. Lack of carbohydrates in the diet leads to serious disturbances, which may even result in death. The Eskimo diet is very rich in protein foods and fat and is extremely poor in sugar and may entirely lack starch. Yet it is surprising to learn that sugar is much disliked by Eskimos and that it is a long time before they get used to it. We take far too much salt in our diet. The Eskimo, on the other hand, gets just enough salt from his food without having recourse to the use of table salt. Yet the Eskimo gets used to salt more quickly than to sugar.

To show you the importance of habit again, we wish to mention that Eskimo dogs brought up on seal meat would have no other meat, even though they may be suffering from extreme hunger. In our laboratory we have often seen albino rats refuse to eat for days, or eat very little a new dietary mixture equally as adequate as the one they have been accustomed to. Europeans who have never eaten bananas or tomatoes find them tasteless and disagreeable. It takes some time before they get up any enthusiasm for the tomato in spite of the fact that it is a very superior food, being rich in three important nutritional ingredients—iron, vitamins and roughage. Next to the orange, the tomato juice ranks in importance as a preventive of a disease of childhood and of adult life known as scurvy.

From what has been said it seems imperative for us not to overlook the importance of habit in medical treatment. Abrupt change in the diet does not seem to go well with many people. Lack of appetite and even serious gastro-intestinal upsets arise. Individuals away from home often find themselves in constipation or in diarrhea for some time before they get accustomed to a new dietary regime. Perhaps this preliminary mal-adjustment is mental or it is the result of a disturbance in the physiological rhythm of the gastro-intestinal mechanism. This disturbance may be in the nature of a very light allergic shock, which disappears as soon as the stage of desensitization is reached. In the treatment of many chronic conditions, such as those involving gastro-intestinal, cardiac or renal derangement or in diabetes, better results may be obtained in some or in many cases by making gradational the changes in the diet necessary to approximate it to the contingencies of the given pathological condition.

That appetite is not a safe guide to the body's need is seen from the fact that many people eat too much protein or use too much carbohydrates. Modern medicine teaches us that excessive protein as is found in such foods as meats, may lead to a deterioration of the kidney and may result in derangement of its functions giving rise to nephritis. Modern medicine also teaches us that excessive use of sugar and starches may so overwork one of our organs, the pancreas, that diabetes may be the outcome.

That appetite is not an index of the body's need for food is again seen in the prevalence of fat persons. Certain types of over-weight are due to excessive food intake. The statistics of life insurance companies and the experience of physicians indicate that obesity is not an asset but a liability. Overly fat people have a much smaller chance in pneumonia or in heart disaese than persons of normal weight.

Some people are very susceptible to certain kinds of foods. They suffer as a result of this susceptibility from gastro-intestinal upsets, from asthma, from skin outbreaks, such as eczema or urticaria, popularly called hives. This susceptibility is referred to as food allergy. Such innocent and simple foods as eggs, milk, beef, pork, beans, onions, cabbage, rice, tomatoes, strawberries, honey and others have been found to be the underlying cause of asthma, acute abdominal pain or skin outbreaks. Often the patient is aware of an allergic attack after eating certain foods and keeps away from these as a result of experience. Most often it is the physician who diagnoses the case by means of history, special skin tests and advises the patient to avoid the food or foods responsible for this condition.

Still another example as to the lack of relation between instinct and biological need we will take from the experience of mothers. It is a very easy matter to explain to a mother how a child should be fed in order to insure normal growth and development. It is not a difficult matter to convince mothers that these foods are needed, nor to arouse in them an interest and a desire to have their children living on such an adequate diet: But by no means is it assured that the child will be so fed. Here we may meet with a stone wall of children's likes and dislikes and mother's inability to alter them. You hear these expressions from mothers: "My child does not like milk. I can't make him eat. He hates the sight of vegetables." Many mothers already know what the child should be fed, but the all-absorbing question is, "How can I get him to eat it?"

The inability of instinct to serve as a guide also holds true for animals. We shall cite from some experiments of Professor Elmer V. McCollum of Johns Hopkins. Young white rats grow well on a mixture of fifty parts corn meal, thirty parts alfalfa-leaf flour and twenty parts cooked beans. These may be ground together so finely that they must be eaten in the proportions given above. McCollum offered to growing white rats corn, alfalfa and cooked beans in separate dishes. They liked the taste of corn better than the other two foods. They tried to live on corn alone, which in itself is not a very superior food, with the result that they grew less rapidly than the animals fed proper mixtures, were not as healthy nor did they posses the same degree of vitality.

To prove again that instinct does not always come to our defense in case of food we will cite a little anecdote. Charles Lamb returning from a jolly dinner party took his seat in a crowded omnibus. Shortly after, a portly gentleman put in his head and asked, "All full inside?" Lamb, who was nearest the inquirer said, "I can't speak for the remainder of the company, sir, but as for myself, that last piece of oyster pie did the business for me."

In our next paper we shall discuss some of the deleterious consequences of qualitative or quantitative deficiencies in diet.

Ginger is familiar as a constituent of ginger tea and Jamaica ginger. In doses of 15 grains it relieves abdominal cramp due to flatus. It is a useful addition to diarrhea mixtures, bitter tonics and preparations given to correct indigestion. A teaspoonful or two, according to taste, in a pint of milk sweetened with sugar, forms a beverage that, drunk morning and evening, is said to remove a number of nervous and dyspeptic symptoms. As a rubefacient it is made into a poultice, either alone or in combination with other spices, for the relief of colic, headache, myalgia, neuralgia, etc.

SURGERY OF THE KIDNEY*

J. M. Willis, M. D., McCook, Nebr.

The treatment of the true nephritides is primarily the treatment of infection. The first question to be decided in all inflammatory diseases of the kidneys is whether the condition is surgical or non-surgical. The second question is whether there are removable extrarenal sources of infection which are contributing indirectly to kidney destruction and whether it is fitting time to attempt the removal of such foci.

The conception of infection is the most important addition to the knowledge of kidney disease of the last 50 years.

It is not generally realized that probably seventy-five per cent of renal stones pass spontaneously. The majority of these stones will probably pass within three or four months following the first symptom. It may be stated, therefore, that it is usually inadvisable to operate for a stone in either the kidney or the ureter until at least three months, and possibly six months, have elapsed since the onset of the symptoms. Immediate operation for stones, following the first or the second attack of pain without evidence of other complications, is strongly to be condemned. Nature should be given full opportunity to remove the stone without intervention. There may be exceptions to this rule, of course, such as excessive pain continued over a duration of several weeks or months; evidence of acute cortical or perinephritic infection, and evidence of urinary retention sufficient to endanger the kidney. Moreover, when it is evident that the stone is too large to pass, nothing is gained by further delay, even though the onset of symptoms is very recent.

SIZE OF STONES: When the roentgenogram shows the stone to be less than 2 cm. in diameter, operation should be delayed in the hope of subsequent passage. When the stone is situated in the kidney and is less than 2 cm. in diameter, it may be very difficult to find at operation, and the search may cause considerable destruction of renal tissue. The difficulty of search is increased and consequent destruction of the tisuse is greater when multiple small stones are present, even though the diagnosis is evident. When the symptoms are indefinite and the identification of the shadow uncertain, immediate operation should not be considered. When the symptoms are not too severe, and there is but little evidence of renal infection, it is advisable to defer operation until the stone has increased in size.

SITUATIONS: Stones situated in the renal cortex or in the end of the calyces as a rule cause less damage to the kidney substance, and produce less acute symptoms than stones situated in the pelvis. As a rule the urgency for operation for a stone in this situation is, therefore, not so great. When a stone is situated in the lower ureter, every opportunity should be given for spontaneous passage unless previously mentioned complications are present. Repeated x-rays, taken at intervals, which show a change of position of the stone are indicative of its early passage. When the stone is situated in the bladder portion, the possibility of its passage, naturally, is increased. Rarely is an operation indicated when a small stone is situated so as partially to protrude from the meatus.

NUMBER OF STONES: When the roentgenogram shows the existence of more than one stone in the kidney or ureter, even though they are of a size which may pass spontaneously, it is usually advisable to operate. Conditions permitting the formation of multiple stones are usually surgical, and the time elapsing before spontaneous passage of such stones may permit of considerable renal damage. If one stone is situated in the ureter and the other in the kidney pelvis, if the stone in the ureter is larger, and efforts to remove it without operation have been unavailing, removal of the ureteral stone is indicated. If the renal stone which remains is less than 2 cm. in diameter, operation should be delayed in order to give the opportunity for the stone to pass spontaneously.

BILATERAL NEPHROLITHIASIS: In the course of routine examinations, stones will be found in both kidneys in approximately every sixth person suffering with renal lithiasis. Although surgical treatment is usually advisable, conditions may be such that any operation for bilateral nephrolithiasis is definitely contra-indicated. When there are no acute symptoms and when the stones in the kidneys are very large multiple operation is usually inadvisable. Removal of such stones situated in both kidneys is usually accompanied by considerable destruction of the kidney tissue, and the chances are that the patient would live as long and as comfortably without operation. When the symptoms are acute and unilateral, however, operation is, of course, indicated.

---

*Read at October meeting of Republican Valley and 10th Councilor District Association, at Hastings.

RENAL FUNCTION: Clinical and laboratory evidence of a very low renal function should usually contra-indicate operation when the symptoms are not very acute or persistent. Operation may be justifiable with acute symptoms, however, even though the renal function is far below the normal. It is surprising how well patients with a functional test of less than 20 per cent phenolsulphonephthalein will react following the removal of a renal stone. Furthermore, a renal function test of from 20 to 30 per cent in the presence of lithiasis, particularly when bilateral, will frequently become approximately normal after the stones have been removed. When the phenolsulphonephthalein return is only a trace, however, and the urea retention is high, operation should not be considered unless the symptoms are urgent. Renal stone occurring with chronic nephritis is observed occasionally. The removal of such a stone will usually not affect the course of the primary nephritis and, unless the surgical indications are urgent, operation is inadvisable. Stone occurring with bilateral pyelonephritis, however, should be removed even though the symptoms are not urgent. Removal of such stones will usually have a favorable effect in that it tends to diminish the infection and to further the benefit derived from pelvic lavage. It is advisable to ascertain the function of the opposite kidney before operating for renal stone, since the necessity for nephrectomy may be found on exploration. When the opposite kidney is practically functionless or when it is absent, a conservative operation is necessary. Operation for stone in polycystic kidney has been done at the Mayo Clinic in five cases. Although operation on a polycystic kidney is usually inadvisable, acute symptoms caused by the secondary formation of stone may necessitate surgical relief. Nephrectomy is indicated only when a complicating infection has rendered the affected kidney functionless. A careful estimate of the comparative renal function is indispensable in cases of polycystic kidney. When glycosuria is present, the same precautions should be observed which are necessary in surgery in any other portion of the body, that is, the reduction of sugar by dietary and other means and operation only when absolutely necessary.

In recent years numerous articles have appeared with reference to the removal of stones in the lower ureter by nonoperative methods. Braasch states that approximately half of the stones in the lower ureter that will not pass spontaneously can be removed successfully by nonoperative measures. Small stones would probably have passed spontaneously even though no cystoscopic manipulation has been made. When the stone has been lodged in the lower ureter during a period of more than from three to six months, and when it is more than 2 cm. in diameter, the possibility of its dislodgement by cystoscopic methods is greatly diminished. Definite contra-indication to further attempts to dislodge the stone, however, may be as follows: (1) a stone more than 2 cm. in diameter; (2) acute impaction with continuous obstruction; (3) acute renal infection; (4) intolerance on the part of the patient to the cystoscope, and (5), anatomic deformity.

Stones in the pelvis of the kidney should be removed by direct incision through the pelvis rather than through the cortex; the advantages of this route are that there is less hemorrhage and far less liability of subsequent fistula, for the ureter when cut unites more rapidly than any other tissue in the body except the peritoneum.

The incision for operation on the kidney begins in the costovertebral angle behind the eleventh rib, passes downward and forward around the angle of the twelfth rib, and into the loin space half-way between the twelfth rib and the crest of the ileum, as far forward as the lateral cutaneous branch of the twelfth thoracic nerve which carries muscle-fibers. This nerve is protected as the incision is carried forward. The latissimus dorsi, the obliquus externus and internus and the transversalis muscles are divided. The external arcuate ligament which ties the transverse process of the first lumbar vertebra to the angle of the twelfth rib, is cut and also, if necessary, the vertebral fascia. This incision does not injure the twelfth thoracic nerve running below the twelfth rib, or the ilio-inguinal and iliohypogastric nerves which run along the anterior margin of the quadratus lumborum muscle. The fatty capsule of the kidney is next incised, and it will be noticed that the renal fat is of a lighter color than the pro-peritoneal fat. The kidney can then be readily elevated for careful examination not only of the kidney proper, but of the upper ureter and the pelvis. In 95 per cent of the cases the renal arteries pass chiefly to the anterior surface of the kidney supplying the anterior row of calices and the anterior half of the posterior row. This brings the vascular center of the kidney well behind the anatomical center. In 5 per cent of the cases the opposite condition exists. In operation on large adherent kidneys the peritoneal cavity may be opened accidentally; it is usually of no consequence and should be closed by catgut sutures. Sometimes the pleura will be injured, with a startling aspiration of air into the pleural cavity during inspiration, followed at once by its expulsion in expiration. It is quite difficult to close this rent.

In approaching the kidney if the perirenal fat is found densely adherent to the fibrous capsule of the kidney nephrectomy is usually indicated. It should be remembered that on the right side of the body there are two very important structures which may be endangered, the vena cava and the retroperitoneal portion of the duodenum. The right renal veins may be very short, and if the vascular pedicle escapes control, in the hurry to check the hemorrhage quickly a rat-tooth forceps may seriously injure the vena cava or the duodenum. An artery the size of the renal springs forward during the systole of the heart and can be grasped and held with the fingers until curved forceps are applied to hold it until it is tied. If the vena cava, or any other large vein is injured, it can be readily caught by the fingers and compressed, and sutured with catgut as held. Injury to the duodenum causes a fistula, and unless it is promptly closed, causes death from leakage of great quantities of intestinal fluids which destroy the cuticle of the skin and dehydrates the patient. When the duodenum is injured and a fistula forms, the abdomen should be opened anteriorly, the retro-peritoneal portion of the duodenum dissected from in front, and the opening sutured, and covered with omentum.

Stones in the kidney not infrequently are overlooked at operation, sometimes because they are buried deep in the calix or in the renal substance. Sometimes x-ray will not show all the stones because one is superimposed on another.

Pus kidneys with dense adhesions are best removed by splitting the fibrous capsule and dissecting it back decapsulating it by turning the capsule back over the pedicle which makes it possible to pull the kidney and its vessels through the enveloping capsule, and the vessel to be ligated directly.

In ligating large vascular pedicles by the clamp method, two clamps should always be placed on the proximal side, so that the pedicle may be safely held by, the distal clamp, while the first ligature is placed in the groove as the deeper clamp is removed. The second ligature makes the safety tie as the outer clamp is released. When a large tumor of the kidney exists, especially so-called hypernephroma, which is a true tumor of the kidney, not related to the adrenal glands, a transperitoneal incision should be made anteriorly the colon on the affected side dissected forward, and the renal vessels exposed and tied, as the first step of the nephrectomy. This prevents mechanical distribution of polypoid growths, which may project into the veins, from being forced into the general circulation. The ureter is then tied, and divided with the cautery, the tumor dissected out and the space closed without drainage.

REFERENCES

1. Some Clinical Aspects of the Kidney Problem, Arthur D. Dunn, M. D., Omaha, Nebr., The Nebraska State Medical Journal, May, 1920, Vol. V., No. 5, Page 130.

2. Conditions Contra-Indicating Operation with Stone in the Kidney and Ureter. W. F. Brasch, M. D., Rochester, Minn., Minnesota State Journal, August, 1920.

3. Stone in The Kidney, Charles H. Mayo, M. D., Rochester, Minn., Annals of Surgery, February, 1920.

ON THYROID THERAPY ON INFANTILE MYXOEDEMA

Docent E. Nobel (Pirquet's Clinic, Vienna) suggests that the various thyroid preparations should be tested clinically on children suffering from myxoedema, as otherwise, in view of the quite unequal efficacy an exact dosage is impossible, and on the other hand the usual standardization by experiments on the larvae of frogs can only be undertaken at certain times of the year. Clinical observation with control of the basal metabolism makes it possible within a few days to pronounce a reliable verdict on the value and dosage of the preparation. Children suffering from myxoedema ought by law to be kept in evidence by some authority until they reach their majority, as otherwise the indolence of their relatives, etc., makes an appropriate treatment impossible. (Wiener klinische Wochenschrift).

A SUMMARY OF THE RECENT DEVELOPMENTS IN THE ETIOLOGY AND DIAGNOSIS OF SCARLET FEVER*

W. B. Moody, M. D., Omaha, Nebr.

Early in the Twentieth Century, about the time of the development and use of blood agar plates for identification of streptococci, studies were undertaken to demonstrate the specific relationship of hemolytic streptococci isolated from patients with scarlet fever.

Marmorek, Aronson(1), and Moser(2), by means of specific agglutinating sera, attempted to prove that a certain strain of hemolytic streptococcus was closely associated with scarlet fever. Moser in 1903 developed an anti-serum which apparently benefitted certain patients. However, such conflicting results were obtained by various observers that no means of isolation of a specific streptococcus of scarlet fever through agglutination reactions was deemed possible and the subject was dropped.

In 1920 the problem was reopened for investigation by Bliss and Dochez(3), Tunnicliff(4) and Gordon(5). With modification and improvements in technique these observers were able to show that hemolytic streptococci isolated from throats of patients suffering from scarlet fever formed a definite biologic group as determined by agglutination reactions. Similar results were also obtained with streptococci isolated from wounds and discharges of scarlet fever patients and from contaminated milk, causing epidemics of scarletina. Repeated efforts were then made to produce scarlet fever in animals by inoculations with hemolytic streptococci. In guinea pigs it was possible to develop elevation of temperature, leucocytosis, exanthem and desquamation, but the picture was not clear cut.

In 1921 the Dicks, G. F. and G. H.(6), working at the McCormick Institute for Infectious Diseases, attempted to cause scarlet fever in volunteers by swabbing suspensions of hemolytic streptococcus over the surface of tonsils and pharynx. No untoward reactions were noted. Experiments using filtered throat mucus injected subcutaneously as well as serum and whole blood from scarlet fever patients failed to produce scarlatinal symptoms.

In 1923(7), a nurse in charge of a scarlet fever patient developed constitutional symptoms and later a typical scarlatinal rash. On the day of the appearance of the rash, a few drops of pus were expressed from an infected finger. From cultures of the pus only hemolytic streptococci were isolated. After studying various cultural phases of this organism, five volunteers were carefully selected and the throat swabbed with a four-day-old culture of hemolytic streptococcus washed from sheep's blood agar slants. In three instances no change was noted. One volunteer developed headache, sore throat and malaise on the third day after inoculation. The throat was red, the tonsils swollen and the cervical lymph glands were enlarged. Temperature was 100°, but at no time was there any evidence of an exanthem. After two days he was completely recovered. The fifth volunteer, a woman age 27, complained of sore throat, headache, backache, malaise, nausea and vomiting. After a few days the typical exanthem of scarlet fever was noted on the mucous membranes and skin of the entire body. Height of fever was 101.2° and WBC 18,600. After five days the fever returned to normal, the rash began to fade and recovery was uncomplicated. Desquamation appeared after the third week and was complete in the fourth week.

Cultures of hemolytic streptococci were then prepared, passed through Berkefeld V filters and portions of the filtrate swabbed over tonsils of six volunteers, but in no case were any untoward symptoms noted. Four volunteers were again inoculated with unfiltered cultures of the same hemolytic streptococci and again one typical scarlet fever developed.

The hemolytic streptococci used in these experiments fermented the mannite. In a series of 100 patients the Dicks isolated hemolytic streptococci in every instance and found that 16% of the strains isolated fermented mannite and 84% did not. A mannite fermenting strain having been successful in producing a scarlet fever syndrome, it remained to make tests with non-mannite fermenting strains(8). Two volunteers were inoculated. In one there was no change. The other, a woman age 22, thirty-four hours after inoculation complained of a generalized aching and nausea. After forty hours the fever was 100° and after forty-six hours a rash appeared. Height of fever was 102.8°, WBC 22,400 and 91% polys. Convalescence and recovery were normal and desquamation appeared on the twentieth day.

---

*Read before the Omaha Clinical Club, Omaha, Nebraska, November, 1924.

These results indicate that certain strains of hemolytic streptococci or some closely allied, but unrecognized organisms caused experimental scarlet fever and that they are not filterable through a Berkefeld V.

In 1918 Schultz and Charlton(9), found that when 1 cc. of serum from a convalescent from scarlet fever was injected into the skin of a scarlet fever patient, definite blanching occurred. It was also noted that serum from some normal individuals caused blanching while serum from other normal individuals caused no reaction, nor did blanching occur with sera obtained from patients acutely ill with scarlet fever. In consequence the reaction was thought to be valueless. It has since been shown that these observations were quite accurate and an hypothesis has been developed to explain these reactions.

Having established a certain causal relationship between scarlet fever and hemolytic streptococci, the Dicks(10), next studied the reactions for susceptibility. Cultures of hemolytic streptococci were passed through Berkefeld V filter, the filtrate proved to be sterile, diluted 1 to 1000 and 0.1 cc. injected intracutaneously. No change denoted negative response. Positive reactions gave small areola after six hours, the maximum was reached in 18 to 36 hours, then gradually disappearing. In addition to the areola, itching, burning and swelling are noted. Sometimes seven to ten days pass before the color is entirely gone. When larger amounts of toxic filtrate are introduced into susceptible individuals, there may result nausea, vomiting, fever, malaise and an exanthem. These symptoms disappear after forty-eight hours and following this the skin tests are negative. Many tests tend toward proving that this reaction is specific and not dependent in any way on foreign protein or anaphylactic reactions. Skin tests were made on 153 individuals. 62 scarlet fever convalescents gave negative skin tests and 3 positive. 15 patients with scarlet fever history were negative, one gave a definite reaction. Of 72 who were never known to have had scarlet fever 35 were negative and 37 were positive.

The next step(11), was an attempt to establish active immunity to scarlet fever by means of injections of toxic filtrate. Having established in susceptible individuals, a skin test dose or unit, injections of toxic filtrate were given to volunteers who showed definitely positive skin tests. Three injections of toxin equivalent to 300, 600 and 1000 skin units were given at five day intervals. Following this attempted immunization, skin tests were consistently negative.

Examinations were then made of 125 persons exposed to scarlet fever. Of these 63 gave negative skin tests and were not treated. 62 showed positive reaction and to 52 of these toxin was administered for immunization. To ten convalescent serum was given. None of these developed scarlet fever. Of 32 individuals similarly exposed, but neither tested or treated, five developed typical scarlet fever.

Recently by Blake, Trask and Lynch(12), and also by the Dicks' therapeutic serum has been developed by injection of horses with toxin from certain strains of hemolytic streptococci. It has been shown that this antitoxin has the property to completely and permanently blanch the exanthem of scarlet fever. That this property is specific is shown by failure of normal horse serum to cause blanching and the fact that the antitoxin will not blanch exanthemata such as appear in erysipelas and other infections. That there is definite curative value in the administration of scarlet fever antitoxin has been shown by rather striking results in severe toxic cases of scarlet fever. However, the preparation of the antitoxin and its administration are still in the experimental stage so that no opinion as to extent of practical use can be given at this time.

As a result of these and other studies there has been developed a more modern conception of the disease, scarlet fever. It is suggested that in scarlet fever there is local disease of the nasopharyngeal mucosa caused by a specific strain of hemolytic streptococcus. A soluble toxin is produced which when absorbed, causes a rash and constitutional symptoms. A secondary systemic invasion of streptococci and other organisms may follow. To the absorbed toxin an antitoxin may be produced which will neutralize it, but will not affect the streptococci. Thus the immunity is antitoxic and not antibacterial, as is shown by the not infrequent septic complications of scarlet fever caused by hemolytic streptococci.

The explanation of the blanching reaction is thought to be the neutralizing property of the convalescent serum and antitoxin, and as certain normal people are naturally immune, their serum has similar antitoxic properties. Probably this natural immunity is due to wide spread distribution of scarlatinal hemolytic streptococcus giving rise to more or less constant contact.

In the way of summary and conclusions it may be stated that:

1. Certain strains of hemolytic streptococcus are closely related to the etiology of scarlet fever.

2. Soluble toxin is produced causing a rash and constitutional symptoms.

3. An antitoxin may be produced which neutralizes this toxin.

4. Skin tests reveal certain susceptibility.

5. This susceptibility may be overcome by immunization inoculations with graded doses of toxin.

6. Therapeutic and curative value of scarlet fever antitoxin is still in the experimental stage but the results up to the present time are encouraging.

REFERENCES

1. Aronson, H., Deutsch, Med. Wchnschr., 29:439; 1903.
2. Moser, P., Jhrb. f. Kinderh, 57; 1903.
3. Dochez, A. R. & Bliss, W. P., J. A. M. A., 74:1600 (June 5); 1920.
4. Tunnicliff, Ruth, J. A. M. A., 74:1386, (May 15); 1920.
5. Gordon, M. H., Brit. M. J., 1:632, (April 30); 1921.
6. Dick, G. F. & Dick G. H., August, 1921.
7. Dick, G. F. and Dick G. H., J. A. M. A., 81:1166, (October 6); 1923.
8. Dick, G. F. and Dick G. H., J. A. M. A., 82:-301, (January 26); 1924.
9. Schultz and Charlton, Ztschr f. Kinderh, 17:328; 1918.
10. Dick, G. F. and Dick, G. H., J. A. M. A. 82:265, (January 26); 1924.
11. Dick, G. F. & Dick, G. H.; Journal of A. M. A. 83:84, (July 12); 1924.
12. Blake, F. G., Trask, J. D., and Lynch, J. F., J. A. M. A. 82:1712, (March 1); 1924.

A CASE OF SUPPURATIVE DESTRUCTION OF THE THYROID WITH RESULTING MYXEDEMA

Malcolm B. Wilcox, M. D., North Platte, Nebraska

E. P., a girl of sixteen, was brought to my office in March, 1924, with a history of invalidism and hypodevelopment, both mental and physical, of twelve years duration.

The family history presented nothing significant. The father and mother were of average physical and mental attainments, with one other normal child. No history of insanity or neurosis could be obtained and there was nothing to suggest luetic taint.

The patient had had a normal birth and had developed in a normal manner until the age of four. At this age she swallowed a penny which lodged in the esophagus. The coin was removed through a vertical incision on the left side of the neck, extending from the level of the thyroid cartilage down to the clavicle, just lateral to the left lobe of the thyroid gland. The mother stated that the child was very sick after the operation and that a profuse purulent discharge took place from the wound for six weeks or more. The patient's symptoms have all dated from that time.

She became adipose and developed a shiny pallor of the skin. Edema of the face and of the extremities was constantly present. She had been unable to advance in school, her teachers saying that she had practically no power of concentration or memory. At the age of sixteen she had reached only the third grade, having been repeatedly sent home with the report that she could not learn. Throughout her childhood she was very irritable with frequent moody spells. At puberty, two years ago, she did not undergo a normal development. She was indifferent as to her appearance. She avoided the society of girls of her own age, and she had no desire for the company of the opposite sex. She preferred to play with little girls much younger than herself and was satisfied with childish amusement. She had always been listless and without ambition. There was no power of sustained effort and she could not remember even one or two articles when sent on an errand.

Constipation had been obstinate all her life and for the past six months she had suffered with a constant dull pain in the right lower quadrant of the abdomen. Severe dysmenorrhea with irregular periods and scanty flow had been present since puberty.

On physical examination temperature was 97, pulse 64, and respiration normal. The patient presented the typical thick waxy dry skin of myxedema. There was marked seborrhea sicca of the scalp. The hair was coarse and dry. The eyelids were puffy. The vault of the mouth was high and narrow. An indurated red scar, tender to touch, was present over the left thyroid region. Pubic and axillary hair was scant and her body was awkward and angular. Rectal examination revealed a small retroverted uterus, with a smooth tender mass the size of a large orange palpable in the right lower quadrant of the abdomen, not connected with the pelvic adexa. The extremities presented a mildly edematous appearance, simulating that of nephritis, but there was no pitting.

Unfortunately, no study was made of the basal metabolism. The urine and blood examinations showed no significant change. The Wassermann blood reaction was negative.

The patient presented a dull listless expression, with mouth open, and body muscles without tonus. Her speech was slow and she was unable to answer questions, stopping in the midst of a sentence, having forgotten what she was saying No mental examination was made but she was obviously much below par mentally

A diagnosis of myxedema, due to suppurative sub-total destruction of the thyroid, and of fecal impaction, was made The patient was placed on two grains of thyroid extract daily, with no other medication On the second day, an excited delerium, with terrifying hallucinations, diarrhea, and tachycardia developed. The thyroid dosage was reduced to one grain daily and these symptoms of hyperthyroidism disappeared She has been taking one grain of thyroid extract daily for the past ten months and the changes in her condition have been remarkable.

She has lost thirteen pounds in weight and her skin is now normally soft, moist and pink. The seborrheic condition of the scalp has disappeared and her hair is much finer and glossy. The mass in the abdomen disappeared with the onset of the diarrhea mentioned above and normal bowel movements are now secured without cathartics. The dull pain is gone. Her features and form have gradually approached those of the normal feminine type. She can now wear a shoe a size smaller than was previously required. It is interesting to note that the scar over the thyroid gland is no longer red, or indurated, and is not tender.

The mental changes have been even more striking. She has become active, vivacious, and ambitious. Her memory has improved. She has developed an interest in music and fancy work and is enthusiastic about the house work, often working beyond her strength. She has made friends among the young people of her own age, both boys and girls. She wants to learn to read and wishes to re-enter school. She is now careful of her appearance and has entered an entirely new life. She is rapidly becoming a relatively attractive and normal girl.

This case is reported because of the fact that it has been undiagnosed for years and because it illustrates perfectly the specific effect of thyroid extract when administered to a patient suffering from insufficient secretion of the thyroid gland.

Fractures of the condyles of the humerus, or femur, olecranon, lower end of the radius, outer and inner malleoli, when not readily reduced and secured by ordinary dressings, can, unless finely comminuted, be held in place by properly placed nails or screws without invasion of the articulation and with only sufficient skin wound to permit the passage of the fixation materials.—Dr. C. E. Ruth (Jour. Iowa Med. Soc.).

EXPERIMENTING

"When the eyes are shut, the hearing becomes more acute," says a medical authority. We have noticed people trying this experiment in church.

MEETING OF THE BOARD OF COUNCILORS

Omaha, Jan. 12, 1925.

The annual meeting of the Board of Councilors, Nebraska State Medical Association, was held at the University Club, Omaha, January 12, 1925, with the following members present: W. J. Douglas, A. P. Overgaard, H. J. Lehnhoff, C. P. Fordyce, S. A. Preston, H. E. Potter, R. D. Bryson, L. W. Rork, C. A. Selby, F. W. Plehn and F. Tornholm. The following were present by invitation: President Palmer Findley, Vice-President F. S. Owen, Ex-President Morris Nielsen, Ex-Pres. J. M. Bannister, Secretary R. B. Adams, Editor F. A. Long; the Journal Committee: B. F. Bailey and W. O. Bridges; the Program Committee: J. B. Potts and Lucien Stark Publisher Gene Huse was also present.

The meeting was called to order by Dr. Potter and election of officers was declared to be the first business. A motion was made by Dr. Overgaard that Dr. Douglas be elected President of the Council. Motion seconded and carried. Dr. Preston made a motion that Dr. Overgaard be re-elected Secretary. Motion seconded and carried.

The following reports for 1924 were presented:

REPORT OF THE SECRETARY-TREASURER

The total membership of the Nebraska State Medical Association for the year of 1924 was 1179. This is ten less than for 1923. Analyzing these figures there were 117 members delinquent in 1924 who belonged in 1923. Of these 14 died, 3 were expelled, one was dropped because he came from the Missouri Diploma Mill and 35 left the state. Adding these we have a total of 53 delinquencies that were unpreventable. This leaves 64 who were delinquent for no known reason. During 1924 we gained 80 new members. So subtracting the preventable delinquencies from these gives us a balance of 14 new members.

During this year letters were written to all delinquent members and to all non-members in the state who were reported eligible by the county secretaries. This amounted to several hundred letters and the results from this are impossible to figure due to the fact that membership is through the county societies and reports are only made once a year.

The Annual Meeting was held in Omaha, May 13, 14, 15, 1924. The attendance was good though it fell off from the two previous years.

During November the Secretary attended the Annual Conference of Secretaries at Chicago. This was a splendid meeting and a number of practical things were discussed. The two that were stressed the most were Publicity and Public Health Examinations. Publicity was to be obtained by each county society forming Press clubs and with the aid of the State Association. Then the press, radio, and speakers were to be used. With this is the idea of educating the public to the value of health examinations and bring back to the doctor the work that belongs to him and that is now being done by insurance companies and the Life Extension Bureau.

Most of the councilor districts have held at least one district meeting. A few of them have held two. These meetings were all well attended, good programs were given and they have helped materially to keep up interest in organized medicine.

During 1924 no county societies have disbanded and Colfax county has been organized.

Due to the removal from the state of Dr. F. H. McCabe, Dr. L. W. Rork has been appointed Councilor of the 10th District to fill the unexpired term of his predecessor.

—R. B. Adams.

REPORT OF THE MEDICO-LEGAL DEFENSE COMMITTEE

The Medico-Legal Defense Committee submits the following report of its action for the year ending 1924:

Last year we closed with nine cases pending, and during the present year, thirteen new cases have come to our attention.

We have managed to get only ten of the cases out of the way. There is more or less delay in any lawsuit, and we have always found that there is little, if any, lost to the defendant by dilatory tactics in this class of cases, so we do not complain because more of the actions have not been tried.

Out of the nine cases disposed of, one was dismissed without trial; four settled by insurance companies (in one of which there had been a verdict for the doctor but a new trial granted), one a verdict of $500 which could not be appealed for that amount, and two adjusted before trial; in the remaining five, we received directed verdicts in two, the verdict of the jury in two, and in the one remaining, the opposition quit about half way through the trial. In this latter case, we secured a stipulation which settled the case then being tried, and also released the defendant doctor from any liability which another party might sue for as arising out of the same treatment. In the case in which we had the verdict of the jury, eight days were required to present it.

The year is closed with twelve cases pending.

As we look over the firms of attorneys representing the plaintiffs, it occurs to us that some of them have very good reputations, and the question occurs, "Why are the more reputable attorneys taking this kind of litigation?" In the past year we have also found members of the State Association who have not only indicated a willingness to testify against a fellow member, but one whom, we thought, stretched the truth to the limit for the plaintiff. One member refused to permit an inspection of his history of the case by the attorney for the committee until permission was secured from the opposing counsel. This tendency to assist the plaintiffs in these cases is called to your attention for consideration.

Respectfully submitted,
J. S. Welch,
R. B. Adams,
A. S. von Mansfelde, Chairman.

REPORT OF THE AUDITING COMMITTEE

The Auditing Committee, after due investigation, begs leave to report the following condition of the Nebraska State Medical Association:

General Fund

Balance Jan. 1, 1924	$ 434.82	
Receipts 1924	6036.62	$ 6471.44
Disbursements 1924	$5498.79	
Balance Dec. 31, 1924	972.65	$ 6471.44
Investment		$ 4544.06

Defense Fund

Balance Jan. 1, 1924	$ 536.09	
Receipts 1924	1327.33	$ 1863.42
Disbursements 1924	$1863.00	
Balance Dec. 31, 1924	.42	$ 1863.42
Investment		$ 2500.00

Journal Fund

Balance Jan. 1, 1924	$2926.55	
Receipts 1924	7938.60	$10865.15
Disbursements 1924	$8660.72	
Balance Dec. 31, 1924	2204.43	$10865.15
Investment		$ 3315.97

Respectfully submitted,
C. A. Selby,
C. P. Fordyce,
R. D. Bryson.

REPORT OF COMMITTEE ON SCIENTIFIC WORK

The committee on Scientific work composed of the secretary and Drs. John Buis and K. S. J. Hohlen as chairman of their respective sections and Drs. Lucien Stark and J. D. Potts as secretaries, held several meetings and arranged the program given at the meeting held in Omaha, May 13, 14, 15, 1924. The meeting was a successful one in all respects except that the attendance was not as large as the two preceding years.

Drs. Edward Oschner and Ralph Webster of Chicago were the invited guests. They were both present and read interesting papers before the general sessions.

Respectfully submitted,
R. B. Adams.

A motion was made and seconded that these reports be accepted and published in the Journal. Motion carried.

The report of the Campaign Committee was accepted and placed on file.

The report of Dr. Roeder for the Publicity Committe was read. It was accepted and placed on file and the secretary instructed to send a copy of each councilor.

It was moved that the secretary be authorized to employ an expert accountant to open a new set of books for the association. Motion prevailed.

Dr. Selby moved that the Medico-Legal Defense Committee be instructed to procure a written contract in securing their attorney for the State Association medical defense for the ensuing year and each succeeding year. Seconded and carried.

The bill of Mr. Bryant which had been approved by the Medico-Legal Defense Committee was read. Dr. Lehnhoff made a motion that as an emergency existed the officers of this association be authorized to withdraw not to exceed $1200 from the Medico-Legal Defense investment fund and place to the credit of the Medico-Legal Defense Committee. Seconded and carried.

Motion was made by Dr. Lehnhoff that it be suggested to the program committee that a good public speaker be placed on the program at the annual meeting for a public address as well as a medical topic. Motion duly seconded and carried.

It was moved that the secretary of the council write a letter to Dr. Cutter expressing the council's appreciation of the courtesies extended to our librarian of the State Medical Association. Seconded and carried.

The report of Dr. Welch, chairman of the committee on Medical Education was read, accepted and placed on file as was also the librarian's report.

Summary of Councilor's Reports for 1924:

District	Members	Deaths	Expense
1	312	4	None
2	140	0	$ 9.00
3	67	1	39.00
4			
5	106	0	17.10
6	58	0	14.45
7	69	0	22.00
8			
9	69	0	42.06
10	35	0	50.00
11	31	0	35.00
12	32	1	48.24

Adjournment.

HEART DISEASE

The Association for the Prevention and Relief of Heart Disease has published a booklet which contains the following interesting facts regarding heart diseases:

Two per cent of the persons examined by insurance companies are rejected because of serious heart defects.

Two per cent of industrial workers are found on careful examination to be the subjects of serious heart defects.

One and one-half to two per cent of the children examined in the schools show serious heart defects.

Four per cent of the men examined in the recent army draft were rejected by the local draft boards and by camp surgeons for organic disease of the heart. Among 5,000,000 men of military age more than 200,000 were disqualified for service because of heart defects.

Among the children of school age in New York City there are 20,000 with damaged hearts.

We can conservatively estimate that at least two per cent of the population, or in the United States over 2,000,000 persons suffer from serious heart disease. (The figures of the draft examinations indicate that there are 4,000,000 persons in the United States suffering from heart disease. The fact that these examinations were limited to ages which probably show an incidence of heart disease under the average, would indicate that the larger figure is a conservative one.)

Heart disease is responsible for one-eighth of the deaths of all ages and for one-fifth of the deaths in persons of forty years of age and over.

Heart disease is the cause of more deaths than pulmonary tuberculosis.

Heart disease is the cause of more deaths than cancer.

Heart disease has a serious effect on longevity, reducing the span of life practically one-half.

THE SPIRIT OF MODERN MEDICINE

The spirit of modern medicine is scientific; it seeks to be open-minded toward new truth, provided this can be rationally related to the great body of firmly established and organized knowledge about nature, life, and mind, about which all scientific men agree. Scientific medicine cannot accept ideas which are merely mystical, or imply unknown and unverifiable physical or chemical properties, or invoke supernatural intervention, or are in other ways clearly fantastic or beyond the reach of any available demonstration or experiment. So, also, modern medicine refuses to be labeled with the name of any school or cult. It is committed to no "apathy"; it favor of conclusions drawn by soundly rea- knows no panacea; it is prejudiced only in soned processes from exact and verified facts. It recognizes the intricacy of its problems; it realizes that only a beginning has been made; it does not hesitate to admit ignorance or to suspend judgment. Its constant aim is the discovery of truth and its application to human need. These ideas, it must be admitted, are the conscious principles of a relatively small number of the medical men of the world. But the modern scientific spirit is permeating the great body of practitioners who have in the past too much relied upon dogmatic diagnosis, rule-of-thumb, "shot-gun" prescriptions, and a cheerful bedside manner. The personality and attitude of the physician toward his patients ought to be important sources of power and success but they should supplement rather than take the place of the scientific method and spirit.—Vincent (Rockefeller Foundation Review, 1922).

Old Ponce de Leon died in the Florida swamps in a vain search for the fountain of youth. Grandma has found it in the barber shop.—Ritzville Journal-Times.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
1012 Terminal Building, Lincoln, Nebraska.

F. A. Long, M. D., Editor Madison, Neb.
R. B. Adams, M. D., Associate and Business Manager Lincoln, Neb.
1012 Terminal Building, Lincoln, Neb. Tele. B2625.

COMMITTEE ON JOURNAL AND PUBLICATION.

F. A. Long, Chairman	Madison
W. O. Bridges	Omaha
B. F. Bailey	Lincoln
R. B. Adams, Ex officio	Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewriten, double-spaced, not the carbon, submitted.

Reprints should be ordered from the printer, The Huse Publishing Co., Norfolk, Neb.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. X March No. 3

Annual Meeting, Lincoln May 12, 13, 14

CALL FOR PAPERS

The program for the next meeting of the State Association will be closed March 31, 1925. No titles can be received after that date. If you wish to read a paper on Surgery, send your name and title to Dr. Max Emmert, Aquila Court, Omaha. If your subject is Medical, send it to Dr. Geo. Covey, First National Bank Bldg., Lincoln.

DUES

The annual dues to The Nebraska State Medical Association became delinquent January 31, 1925. If you are reported delinquent after April 1st, 1925, you lose your Journal and defense rights. In addition, we are on that date required to report all delinquencies to the A. M. A. To avoid this, send your dues to your county secretary at once. Send $5.00 plus the amount of your County Society dues.

—R. B. Adams, Sec.-Treas.

LEADERSHIP AND "THE RING"

Once in a while out of the organized profession there arises a cry of "wolf, wolf, when there is no wolf". This article is prompted by the proposition sometimes advanced that there is "a ring" which dominates organized medicine in Nebraska and elsewhere.

Let us reason together.

Every movement must have an organization and every organized movement must have a leading spirit, a person (or persons) with vision, a boss (if you please) who seeing the light is willing to lead a forward movement. Everything from a country school district community Sunday school on up to the highest institution in the United States must and does have such leadership. We do not always bear this in mind.

Has it ever occurred to you that our government is a government by compromise? Do you realize that when your board of education acts the decision is rarely the unanimous opinion of all the members, but a compromise? Do you realize that when the Congress enacts a law it is the act of the majority, the minority acquiescing?

Suppose that an obscure and diffident physician from a small town in this state began attending the annual meetings of the Nebraska State Medical Association almost forty years ago; that during the passing years he presented a few papers before the association, accepted committee assignments seriously when tendered, made a modest effort to meet, and be met by, others attending the sessions, never sought or asked for an office, but in time was honored by the highest position within the gift of the association to bestow. Not content to rest on his laurels his interest in the association and its work continued to the present time. By the philosophy of the fault-finder he must be a "ringster".

The profession is represented in the House of Delegates through the county delegate. If the delegate does not attend, or attending takes no part, that county is not represented, and the fault is probably that the county society did not select well.

Fault-finding rarely accomplishes anything. The fault-finder is rarely a doer. The fault-finder, as a class, would overthrow the existing order and replace it with a sort of czarism of his own. LaFollettism is a good example.

A group of willing workers is not a ring, but a constructive force, without which no organization can function.

Leadership needs to be encouraged; not frowned at.

Be thankful for leadership.

THE DEFENSE FUND AND MALPRACTICE SUITS

Several times in the past year attention has been called in a casual way to the number of malpractice suits instituted and pending in the courts of this state. Every month from one to several such suits are filed. This, of course, is of interest to the membership of the association, especially as to its effect on the Defense Fund. A careful study of the financial report this year shows that our defense fund was overdrawn at least one thousand dollars. This is, of course, accounted for by the number of malpractice suits that it has been called upon to defend.

Now, we must consider if this is a worthy cause and of benefit to every member of the Nebraska State Medical Association. Provision must be made at the annual meeting to meet this additional expense if the work is not to be hampered. As compared with other states we have been very fortunate as only one dollar per member has been needed for the past twenty years. One state collects $7.00 per member, per year, for the defense fund.

We have a committee that is in touch with this work and the best we can do to show our appreciation of their always well directed efforts, is not to hamper the committee in a financial way.

SCIENTIFIC MEDICINE OR CULTISM

"House Roll No. 41, a bill for an Act to prevent discrimination in the employment of special physicians in eleemosynary and in all institutions supported directly or indirectly, wholly or partly, by public revenue" is intended to admit cultists, particularly "the practice of religious tenets", in state institutions at the request of patient or his representative. The profession must see to it that the legislators fully understand that this is intended to discredit scientific medicine.

How nimbly and trustfully we go from one fad to another, seeking always the short and easy cut to cure and restored health. From Fletcherism to Tanlac; from the "Key to the Calories" to Fleischmann's Yeast; from vitamines to monkey glands; from Coue to Abrams. Every day, in every way—Next!—Bulletin, Indiana State Board of Health.

DR. IRVING S. CUTTER, DEAN

The election of Dean Irving S. Cutter of the University of Nebraska College of Medicine to the deanship of Northwestern University College of Medicine, Chicago, and his acceptance to take effect in mid-summer, is announced.

It has been known for several years by Dr. Cutter's closest friends that Chicago wanted him and had offered him financial inducements that would have turned many a man's head; but Dr. Cutter, feeling that the work he had undertaken at Omaha needed his direction, remained true to his trust.

DR. IRVING S. CUTTER

It must be assumed that Dr. Cutter now feels that the Nebraska University College of Medicine, as a Class A school, has been placed on a firm footing and the urge to Northwestern with its almost unlimited resources and opportunities for service became too strong to resist. Nebraska will miss Dean Cutter.

Dr. Irving S. Cutter was born in Keene, N. H., in 1875; was graduated from the University of Nebraska, B. Sc., 1898, and M. D. in 1910; taught in the Humboldt, Nebr., high school; was principal of the Beatrice, Nebr., high school; practiced medicine in Lincoln; was instructor in physiological chemistry and later professor of biochemistry in the University of Nebraska; became Dean of the University of Nebraska College of Medicine in 1915.

Dr. Cutter is a member of a number of national scientific bodies and is the author of a number of monographs on medical and educational topics.

In 1923 Dr. Cutter was elected president of the Association of American Medical Colleges. During the latter part of that year he went abroad and made a first hand study of clinical and laboratory instruction in England and Scotland. A portion of the report of this study was used in his presidential address a year ago and many points in this study have been adopted for use by American Medical colleges.

Dr. Cutter was the first editor of the Nebraska State Medical Journal (1916-1918) and laid the firm foundation for the Journal of the present.

SHOULD THE NEBRASKA STATE MEDICAL ASSOCIATION ENGAGE IN PROPAGANDA FOR THE PURPOSE OF EDUCATING THE LAY PUBLIC?

The doctor of the old school was an individualist. He had little or no contact with public affairs. His business was to relieve suffering and prolong life and in his endeavors to fulfill this great mission he was of necessity self reliant. Clinical laboratories and the council of specialists were denied him in large part. And so he went his way in the fear of God and usually in the favor of man. He belonged to the family circle and not to the body politic. The old family doctor was a domestic institution and as such was beloved and revered.

The discoveries of Pasteur and of Lister bequeathed Preventive Medicine and as a result of this bequest the relation of the physician to the public was necessarily changed. The doctor could no longer be self contained. For generations he had refrained from taking the public into his confidence—something in the nature of "a conspiracy of silence" prevailed in the profession, with the inevitable result that the public was left in ignorance and readily accepted the fallacious claims of the Cultists.

Clearly there could be no progress in Preventive Medicine without cooperation between the profession and the public. And so it came to pass that one organization after another has launched campaigns for the purpose of educating the lay public in matters pertaining to public health — to the prevention and cure of disease. Witness the American Society for the Prevention of Tuberculosis, the American Society for the Control of Cancer, the American Medical Association in its publication of Hygeia, the Gorgas Memorial Fund, and a host of other institutions all working toward the one great object. The prophet Hosea said that "people are destroyed for lack of knowledge", and the converse is now in evidence, by virtue of the organized efforts of these agencies, that people are being saved by knowledge.

But, happily, we are not alone indebted to such organizations for the spread of the Gospel of Health. Individual members of the profession are everywhere doing their bit in the broader field of medical publicity. The doctor is distilling into the minds of his patients and friends the modern doctrine of prevention of disease.

But what of our medical organizations — our national, state and county societies? What have they done in the way of medical propaganda? Little, indeed, was done by these agencies until very recent years. Through the leadership of the American Medical Association, and particularly in the publication of Hygeia, there has developed a nation wide sentiment in favor of medical publicity controlled and directed by organized medical associations and societies.

Dr. John M. Dodson, editor of Hygeia, in a personal communication, has the following to say:

"The day of mystery and mysticism in medicine is fast passing away. It endured for many centuries, largely because the medical profession had itself so little accurate knowledge of the causes and methods of prevention of disease. The last half century has witnessed an amazing advance in this knowledge. We have learned much about the causes and modes of transmission of many diseases. This has made it possible to cure some and to prevent many. This can be done effectively, however, only by the intelligent cooperation of the public. To this end the public must be informed about health and sickness. The laymen are discovering this. They are seeking — demanding such information. This is bound to be given them, either by the family doctor as the health adviser of his patients and by the organized profession, or by self-constituted volunteer agencies which are not primarily interested in the welfare of the medical profession, although their motives are usually altruistic and commendable.

If there ever was a time when it was important for the medical profession that the public should have a truthful, correct idea of its purposes and ideals, that time is now. Will the medical profession itself give this knowledge to the people or 'let George do it'? The profession can accomplish its share (and that is the major portion of the job) of the health and medical education of the public through the magazine "HYGEIA", established by the American Medical Association for that purpose; through the reprinting of articles from "HYGEIA"; and other health items in the newspapers and other publications; by carefully prepared health talks to lay audiences and over the radio; by health exhibits and expositions; and by promoting periodic examinations of the apparently healthy — one of the most effective means of health education".

Answers to the questionnaire revealed a large sentiment in favor of publicity. The proposal was six to one in favor of the state association engaging in propaganda for the purpose of educating the lay public.

Let us first hear from those who oppose the undertaking. We read that "the proposition is of doubtful utility. A portion of the laity always have and probably always will listen to the sirene voice of the faker at all times and especially so in grasping for the mystic in the matter of healing. In my opinion it is a waste of good money and effort to make any special propaganda drive." And again: "I am in doubt about the advisability of an active program. If we could get some scientific organization not strictly made up of doctors, such as Carnegie or Rockefeller funds, to back such a program, it would be advisable". One observes that "we have spent much time and some money during the past three years on Cancer campaigns. Cancer quacks are reaping the harvest"; while another objects on the grounds that "it would help only a favored few" and yet another avers that "we have done too much for the public already. It is our duty to protect the public against disease. To educate them is impossible".

We are admonished to "improve our own work and the lay public will soon make a better path to our door", and it is noted by another that "the cults are supported by ministers, college professors, lawyers and the well to do. My answer is that the public does not need propaganda". "Teach the doctor the art of salesmanship; teach the doctor more psychology. The lay public will not be educated", says one, and in like manner we are told that "truth, honestly spoken, never appeals to the general public. What they clamor for is falsehood and exaggeration. I see no way to educate them". And, again, that "the public really do not want to be educated. The lay public seems to think that if the regular profession advocates something really for their benefit we have an axe to grind".

On the affirmative side are many helpful suggestions and it is to be regretted that space will not permit all to be published. Says one: "I believe that proper education of the lay public would work to a better advantage than any other line of endeavor". The question is put: "Shall we leave the public to be educated by quacks?" And again the assertion is made that "our strict adherence to ethics has strangled us, so to speak. I believe that proper and legitimate advertising in the lay papers would be ethical and would do more to acquaint the lay public with the truth than any other thing".

"It would seem logical," says one, "that the largest organized medical body in the state should become the oracle for the promulgation of the precepts and principals of rational medicine". "By showing the actual accomplishments of scientific medicine the public can form its own conclusions" is a pertinent suggestion and another along similar lines is to "fill the daily papers with the doings of regular medicine and use "M. D." instead of "Dr".

The proposition is favored "provided the medical profession will take an intense and honest interest in such propaganda", and again it is observed that "the profession collectively and individually is losing one of its greatest opportunities and failing in one of its greatest functions by not carrying on a system of ethical advertising propaganda". In terse English we read: "Organized medicine should most certainly sell what it has to the public. This should be done by state, district and county societies and not by any particular man". One favors the employment of a "publicity agent to so adapt the benefits of medicine that the man of the street will comprehend it". "Yes," says another, "the public pays the bill and should know what it is paying for; the intelligent patient is the easiest one to treat". "Yes, by all means", is the answer of one who suggests that "all capable medical writers should under the leadership and the sanction of medical societies, write articles in all magazines and newspapers". "If such a campaign were economically and efficiently managed I should", says one, "be glad to contribute liberally and I think practically all the regular men who have the proper respect for our great profession and proper ideals for our work would". "Absolutely and eternally yes," says another, "nobody else can intelligently render this service".

"It certainly pays to engage in propaganda for the puropes of educating the lay public", says one of our leading exponents who suggests further that "the articles should be given out under the name of the state society after each article has been approved by a committee appointed for that purpose. A slight increase in dues would be nècessary to finance it". And the suggestion comes from another "to discuss such financing at the next state meeting".

WHAT METHODS SHOULD BE EMPLOYED?

We are advised to "get Hygeia into the hands of the laity and the situation will right itself". Every physician is admonished to "take upon himself this matter of educating the public", and we are asked to "bring pressure to bear upon the educational authorities to incorporate in our public schools' curricula a sensible amount of physiology, human anatomy, biology and biochemistry that the future generation may be enabled to judge for themselves of the reasonableness or otherwise of the tenets of the cults."

The suggestions as to the methods to be employed may be epitomized as follows: 1. Bureau of authorized speakers. 2. Insertion in the public press and magazines of concise, practical discussions on medical topics; such contributions to be authorized by the county and state medical societies. 3. Distribution of medical bulletins. 4. Invite cooperation of editors, educators, clergy and civic clubs. 5. Encourage wide distribution of Hygeia. 6. Use of the radio and moving picture screen.

HOW BEST TO FINANCE SUCH A PROGRAM?

The suggestions to increase the dues of our state and county societies was the almost universal suggestion of those who favored publicity. A few suggested the raising of funds by private subscription while others thought the State Bureau of Health should finance the work.

The following quotation was clipped from the bulletin of the A. M. A.:

"Another thing that makes for success in a county medical organization is enough dues to enable the officers to do something. It costs money to get some features that are really worth while, and even the necessary running expenses of a medical society require some funds. Usually the man who doesn't pay much for anything doesn't think he is getting much no matter how valuable the services may be. On the other hand, even a medical society doesn't provide much that is worth while without some funds. There is no reason why a doctor should complain about medical society dues. He spends in one month for dues to the Elks, Ku Klux Klan, in going to theatres, or for various pieces of frivolity, more than he spends in a whole year for all of the medical societies combined, the A. M. A. included".

The committee on Public Activities of our state society has been authorized by the council to launch a publicity program of limited scope and this is being done. Excerpts from Hygeia will be broadcasted from WOAW (Woodmen of the World) and from the Norfolk News. In addition to this these excerpts will be published in periodicals edited by various insurance companies. In this manner more than a million people will be reached and at no cost to the association.

—Palmer Findley.

TUBERCULOSIS AND THE EYE

With the enthusiasm for focal infections as a root of all evil just passing over us, and not by any means spent, some of us are apt to forget at times our old arch-enemy, tuberculosis. In some European clinics the opposite is the case, and focal infections are only considered when lues and tuberculosis are eliminated. While we do not see so many cases of ocular tuberculosis as are seen in some quarters of the globe, still in any year one should see a good many cases and the forms in which tuberculosis may affect the eye are legion. Besides the cases of frank tuberculosis of the iris with tubercles to be plainly seen, and tuberculous exudation in the vitreous, which are relatively rare, there are at least three conditions not so rare which are in all probability due to tuberculosis. Phlyctenular kerato-conjunctivitis apparently represents a state of allergy, or hypersensitiveness to tubercular toxins which are absorbed from some active focus elsewhere in the body, usually the cervical or peribronchial lymph nodes. Sclerosing keratitis, a form of scleritis affecting gradually the greater part of one or both corneas, may be due to a different form of allergy or may be an active focus itself; as in one case recently seen where tubercles could be studied with the slit-lamp and corneal microscope. Recurrent hemorrhages in the vitreous occurring in young adults often if not usually signify the presence of tubercles forming along the retinal vessels, invisible because of the bloody vitreous. In these last two conditions, there may be no other demonstrable focus discoverable elsewhere, and still the subcutaneous injection of 1-10 milligram of old tuberculin usually causes a marked general and local reaction. A young man now under treatment had had teeth and tonsils removed, and anti-luetic treatment in spite of negative Wassermanns, meanwhile having lost in one eye all and in the other a great deal of his vision. He gave marked local and general reactions and is now getting therapeutic tuberculin injections.

It is interesting that the use of tuberculin, now generally discarded in most branches of medicine, still seems to be of definite value in ophthalmology. Using 1-20 to 1 milligram as a diagnostic injection, and working up from 1-5000 to 1 mg. in treatment often produces definite, if very slow improvement and some final cures in these obstinate cases. Active old tuberculin must be used for the dilutions which will remain active two or three weeks, if kept cool. The treatment consumes some time, which seems like more if given with little faith in its results, but I am confident that it has saved many eyes and that many more have been lost for lack of its use, and for failure to recognize the tuberculous conditions which demand it.

—Sanford R. Gifford.

A QUESTION OF ETHICS

The following announcement (name omitted), was copied from a Nebraska weekly paper.

"Free Eye Clinic

I wish to announce that I have arranged with the author of the LaGrange System of Refraction to give me a post graduate course of instruction in optics and assist in a free eye clinic at my office, Thursday, Friday and Saturday, Etc.

Yours truly,
Dr. ————."

"Dear Editor: I am sending you a marked copy of our local paper. Please read the marked notice and let me know whether it meets with your approval. I have raised the question, 'Is it ethical?' If so what is to prevent my having a free rectal clinic or a free baby clinic in my office advertised as per enclosure? The 'LaGrange' doctor is supposed to be registered at Cedar Rapids, Iowa, but I do not find his name there. 'Dr. LaGrange' did not appear here personally, but sent a Dr. Buffkin to do his work. One of my patients avers that he made the rounds and tried to refract her. It is reported that this Dr. Buffkin gets a commission from a well-known optical company, on glasses he places and instruments he installs. Has he an itinerant license?

Fraternally,
————.

EDITORIAL PARAGRAPHS

Five ounces is said to be the total amount of radium available in the entire world.

Country doctors should investigate the merits of the caterpiller tractor for March roads.

Professor Trendelenburg, he of "position" fame, died in Berlin in December, aged 80 years.

The medical man who does not read the advertising pages of his medical journals is losing a great deal.

It seems unlikely that anything of direct interest to the medical profession will come from the present session of the legislature.

Sorry, but it seems to be necessary to keep reminding the profession continuously that the editor lives at Madison, Nebraska, not at Omaha, Lincoln or Norfolk.

Representative Yensen of Scottsbluff introduced a bill in the lower house fixing the maximum charge for mileage for physicians at twenty-five cents, which at once recalls the otherwise man.

Through the efforts of Dr. Palmer Findley, president, and others, the Woodmen of the World radio station (WOAW), Omaha, and The Norfolk Daily News (WJAG), are broadcasting short health talks from Hygeia.

Professor L. Van Es of the Nebraska University College of Agriculture, says that in tuberculosis of hogs, 88.91% is avian tuberculosis, 5.2% mammalian and 6.2% mixed. Avian tuberculosis is the least harmful type.

Two years ago the school children of Rochester, N. Y., were examined for visible goitre with the result that 3844 cases were found. Iodin treatment of the water was instituted and a resurvey made after two years disclosed 1766 cases.

Church people say the radio keeps people from attending church, since they can hear sermons at home. Which makes one wonder whether the "broadcasting" of the Nebraska State Medical Journal lessens interest in medical society meetings?

Dr. W. H. Wilson, Lincoln, has been appointed chief of the bureau of health by Governor McMullen. Dr. Wilson has had former service in this bureau, was a former state senator from Pawnee county and is a well known member of the Nebraska State Medical association.

The secretary of the Eleventh Councilor District, Dr. C. C. Wallingsford, Ogallala, is asking physicians of that district to furnish him the names of Slow Pay, Poor Pay and Never Pay patrons so he may make a Blacklist for the benefit of the profession. He thinks we are "fools" not to get at the bottom of the dead-beat evil; and he is right.

Dr. William Allen Pusey, Chicago, is publishing a series of articles in the Journal A. M. A. on "Medical Education and Medical Service" in which he comes to the conclusion that there is unescapable evidence of the developing shortage of rural practitioners as shown by the average age of country physicians. This average age is given as above fifty years.

The American Association for the Control of Cancer, New York City, has prepared a little pamphlet on cancer "cures", a copy of which will be sent on request to anybody asking for the same. Any number of copies may be had for distribution to members of organized bodies. Any scheme that will insure suitable distribution of the pamphlet will be appreciated.

Dr. John Hunter, brilliant young anatomist, of Sydney, Australia, who in connection with Dr. N. D. Royle, did the very interesting work on spastic paralysis recently brought before the profession, and who came to America to give the John B. Murphy Oration in Surgery before the Clinical Congress of the American College of Surgeons at New York City last fall, died on his return trip at London, December 10th, less than thirty years of age.

Dr. John Jay Keegan, Omaha; Alumnus of the University of Nebraska College of Medicine and youngest member of the faculty is to become Dean of the College of Medicine on the retirement July first of Dr. Irving S. Cutter. Dr. Keegan has been assistant dean and secretary of the faculty for some time. He is professor of clinical pathology and in charge of neurosurgery at the College of Medicine. Dr. Keegan has done special work at Harvard Medical School and was in Naval service during the World War.

A member of the publication board offers the criticism that some of the original articles published in the Journal during recent months are too long for publication in one installment, that a reader will sit down and read through at one sitting an article of three to five pages, but that if the article is eight to ten or more pages he will tire of it before wading through and will put it aside for another time and then forget it, or discard it in disgust. The criticism is accepted as constructive and the editor will consider hereafter dividing long articles into two installments.

A circular letter has been sent by secretary Adams to the secretaries of all component societies stating that it is the desire of the A. M. A. and of the Councilors of the Nebraska State Medical Association that county societies broadcast through lay journals, radio, popular lectures, etc., the history of scientific medicine. This to be done without mentioning, directly or by implication, any other method of treating the sick. The articles on medical subjects appearing in the Omaha Sunday Bee by authority of the Omaha-Douglas County Medical society are cited as good examples of the kind of publicity thought desirable.

MATERNAL MORTALITY IN OMAHA

Maternal mortality in the city of Omaha is decreasing, as the following table will show.

Year	Total No. of Deliveries	Total No. of Maternal Deaths Ages 15 - 47	Maternal Death Rate per 1000 Deliveries
1921	5044	326	8.7
1922	4819	375	8.9
1923	4874	355	6.7
1924	5415	319	3.1

A listing of the causes of death in this series is as follows:

1921		1922		1923		1924	
1*Puerperal group	44	Cardiac Diseases	43	Cardiao	45	Cardiac	60
2 Tuberculosis	40	Tuberculosis	43	Tuberculosis	40	Tuberculosis	38
3 Heart disease	33	*Puerperal group	42	Pulmonary affections	36	Pulmonary affections	27
4 Peritonitis	29	Pneumonia	36	*Puerperal group	33	Cancer	26
5 Cancer	24	Brain tumors	31	Operative shock	30	Postoperative	23
6 Operation and shock	24	Operation and shock	28	Cancer	27	*Puerperal	17
7		Cancer	27	Peritonitis	2.		
Total No. of deaths from all causes	326		375		355		319

For the year 1924, there was a total of 5415 births, and the total number of deaths from all causes in women in the child bearing period, or, from the ages of 15 to 47, was 319. Of these 319 deaths, only 17 were caused by diseases incidental to childbirth. This makes this group of cases 6th on the list where three years previously it had been the largest contributing factor in causing death of these women in the child bearing period. The maternal death rate per 1000 deliveries has been cut in half in the last year, the statistics showing 6.7 per 1000 in 1923 and only 3.1 per 1000 in 1924. May the good work go on.

—Earl C. Sage

THE SOCIETIES

Omaha-Douglas County Medical Society

This body met in regular session at the University Club, Omaha, January 13th, with Dr. Rodney Bliss in the chair.

The chairman reported that Dr. J. M. Bannister, chairman of the committee on public affairs, who was unable to be present, had requested him to state that in the past year fifteen articles on medical education written by society members had been published in the Omaha papers, and that there are seven or eight more papers now in process of preparation. These papers are published in the Sunday Bee.

The chairman stated that he hoped that this year the members would try to present more clinical cases and more pathological specimens and urged the doctors to try to preserve interesting specimens and give the rest of the members the benefit of these cases. He announced that five minutes would be given to each specimen or clinical case. He also urged the younger members as well as the older ones to enter into the discussions of the papers read and the cases presented.

Dr. A. J. Brown reported that the program for the year is filled up to and including the last meeting in September. He urged those who wished to present papers would let him know as soon as possible.

Presentation of a case by Dr. Max Emmert: This baby was first seen on June 21st, 1924, aged 5 weeks, in consultation with Dr. P. T. Conlan.

The baby at birth was normal. No complications following delivery. About three and one-half weeks after baby's birth she developed a bronchial cold which was very near pneumonia but it cleared up in a few days. Four days later the mother noticed a tender red area over right shoulder. An incision was made over this area and pus was obtained.

On the twenty-first of June an x-ray was taken and showed a definite osteomyelitis of upper end of humerus with fragmentation of end of shaft. The baby was operated on and the deltoid was found to be lifted up from the humerus by pus. The loose fragments were removed and bone chiseled for about one-third its length. Wound was dressed without any attempt to close skin. The progress was very satisfactory. (The entire end of the shaft was destroyed).

The x-ray taken today show that the child has a normal shaft of humerus. There is absolutely no trace of the former trouble. The mother says the baby uses this arm as well as the other one. A short discussion brought out the fact that the periosteum was not removed and that the length of arms, although not measured, seemed to be the same.

The Madison County Medical Society annual meeting was held over a dinner at the Pacific hotel, Norfolk, January 20. Dr. J. D. McCarthy, Elgin, was elected president; Dr. E. L. Brush, Norfolk, secretary; and Dr. G. E. Charlton, Norfolk, delegate. Since war time the Stanton county profession has affiliated with this society; at this meeting the Pierce county profession joined and the profession of Antelope county was invited to join, it appearing that organizations in those counties were out of the question. Dr. J. D. Reid, Pilger, gave a very interesting paper on the Schick and the Dick Tests together with clinical demonstrations of the same.

The **York County Medical Society** at the annual meeting elected Dr. D. D. King, York, president; Dr. E. S. Wegner, York, secretary-treasurer; and Dr. S. O. Harris, Gresham, delegate.

Before the **Gage County Medical Society**, Beatrice, January 27, Dr. C. A. Bradley, Beatrice, gave a paper on "Psychosis" and Dr. C. P. Fall gave a discussion on "Infant Feeding" citing many cases from actual practice. Dr. C. A. Curry, Beatrice, was elected president; Dr. F. W. Buckley, Beatrice, secretary-treasurer.

At the **Jefferson County Medical Society**, Dr. H. E. Harvey was elected president, Dr. Jennie Roselle, secretary-treasurer.

The **Saline County Medical Society** discussed "The Digestive Organs: Complications During Attacks of Influenza", at a meeting January 13th, at Crete.

The annual meeting and banquet of the **Red Willow County Medical Society** occurred January 15, at the Keystone Hotel, McCook, Dr. R. R. Reed, McCook, was elected president; Dr. D. H. Morgan, McCook. secretary-treasurer; Dr. J. M. Willis, McCook, delegate. It was voted to hold a southwestern Nebraska medical meeting at McCook, some time this spring.

The **Buffalo County Medical Society**, after an elaborate dinner at the Midway hotel, Kearney, elected Dr. Henry Farrell, Kearney, president; Dr. C. L. Ayers, secretary-treasurer; and Drs. J. A. Burford and J. W. Laughlin, delegates.

The **Pre-medic Society** of the State University gave a banquet at the Grand hotel, Lincoln, January 22. Dr. A. R. Mitchell, Lincoln, spoke on the skilled general practitioner as against the specialist.

The **Nemaha County Medical Society** in annual meeting at Auburn, January 26th, elected Dr. E. M. Tyler, president; Dr. B. A. Smith, secretary-treasurer. An open forum on materia medica was a feature of the meeting. It was decided to hold bimonthly councilor district meetings in connection with the other counties in the district.

HUMAN INTEREST TALES

Dr. J. W. Luxford, has moved from Decatur to Union.

Dr. R. W. Place of Iowa has located at Beemer for the practice of medicine.

A birthday surprise was perpetrated on Dr. C. L. Mullins, Broken Bow, recently.

Dr. A. P. Fitzsimmons, Tecumseh, submitted to a mastoid operation in February.

Dr. L. E. Smith, medical missionary in West Africa, has been lecturing in this state.

Dr. and Mrs. J. P. Lord, Omaha, spent a midwinter vacation at Miami, Florida.

Dr. P. J. Flynn, Plattsmouth, was a patient at St. Catharine's hospital, Omaha, recently.

Dr. E. C. Foote, Hastings, spent several weeks at the Boston clinics the first of the year.

Dr. M. N. Nemquist, recent interne of the University hospital, Omaha, has located at Bloomfield.

Dr. J. North Evans, Columbus, submitted to an operation for appendicitis the latter part of January.

Dr. William T. Rance, Omaha police surgeon and Miss Mary E. Quinn, were married in Chicago, recently.

Dr. R. B. Kepner, Burlington physician, at McCook for several years, was transferred to Aurora, Ill., in January.

Before the local rotary club. Dr. J. C. Waddell, Beatrice, gave an address recently on the "Evolution of Medicine."

Dr. William H. Melcher, Omaha, and Miss Bertha Robinson, Ewing, Nebr., were married in Council Bluffs, January 20th.

Dope fiends are again abroad. The offices of Dr. P. J. Flynn and Dr. H. C. Leonard, Plattsmouth, were ransacked recently.

Dr. R. D. Proctor, who has been associated for some time with Dr. A. E. Gadbois, Norfolk, has located at Cedar Rapids, Iowa.

Dr. J. N. Haverly of a well known Omaha family, lieutenant in the naval medical corps, has been ordered to duty at Cavite, Philippine Islands.

Two more malpractice suits were filed during January against Nebraska surgeons, one in Lincoln and one in the western part of the state.

Dr. Lucien Stark, wife and son, Hartington, started from Omaha, January 18, by auto, for Florida. This was just in time to meet the winter floods in the Southland and one can imagine also a flood of verbal pyrotechnics.

NECROLOGY

Albert H. Koenig, Omaha; Creighton University, College of Medicine, 1904; a successful practitioner, possessed of considerable property, was found in his office a suicide by hanging, presumably on account of ill health, January 18th, aged about forty-four years. He was unmarried.

A. V. Robinson, Beatrice, Nebr.; Bellevue Hospital Medical College, 1881; prominent practitioner at Beatrice since 1890; said to have been the pioneer in x-ray work in Nebraska; a man of scholarly attainments; died of apoplexy, at his home January 24th, aged sixty-seven years.

Joseph H. Smith, Albion, Nebr.; Rush Medical College, 1870; pioneer physician of Albion where he located in 1879 and served the community for thirty years; died February 7th at Bushnell, Neb., and was buried at Albion, aged about 82 years. Dr. J. W. B. Smith, Albion, is a son of the deceased.

BOOK REVIEWS

Medi-Cult: The A-B-C of the Medical Profession. B. F. Lorance, M. D., of Auburn, Nebr. Fabricoid covers, 73 pages. $1.50. Boston. Richard G. Badger, Publisher.

Our own Dr. Lorance of Auburn, Nebr., has brought out this little volume "to make clear to the average layman some of the fundamental principles of health and disease, while giving a bird's-eye view of the science of medicine, and those engaged in the healing art". The subject is treated under three heads: Classification of those engaged in the practice of the healing art; regular medicine and the germ theory of disease, and unethical regular physicians. The subject is very happily treated and one might wish that every lay person could read the book.

Humor and Pathos of Obstetrics. H. D. Fair, M. D., Muncie, Ind. Cloth, 236 pps. $2.75. Muncie, Ind., Scott Printing Co., Publisher. The author has written a very readable little book based on twenty-five years of obstetric practice. He has had just the same experiences that all those of us who have had from twenty-five to fifty years practice have had. He tells us nothing new; but he has a vivid imagination and wonderful descriptive powers so that if you start to read the book you will not want to stop to eat, listen to the radio or sleep until you have finished it. Every new incident he tells will remind you of one you have had identically like it.

BOOKS RECEIVED

National Health Series. THE CHILD IN SCHOOL; CARE OF ITS HEALTH, by Thomas D. Wood, M. D. ADOLESCENCE; EDUCATION AND HYGIENIC PROBLEMS, by Maurice A. Bigelow, Ph. D. YOUR MIND AND YOU; MENTAL HEALTH, by George K. Pratt, M. D. HEALTH OF THE WORKER; HOW TO SAFEGUARD IT, by Lee K. Frankel, Ph. D. 18 mo. Flexible Fabricoid. Average number of pages, 70. Price, per volume, 30c. Per set, $6.00. Funk & Wagnalls Co. New York, 1924.

MATERICA MEDICA FOR NURSES, by A. L. Muirhead, M. D., and Edith P. Brodie, A. B., R. N. Cloth. Pages 190 with illustrations. Price $2.00. St. Louis: C. V. Mosby Co. 1924.

ANAESTHESIA FOR NURSES, by Colonel William Webster. D. S. O., M. D., C. M. Cloth. Pages 153 with illustrations. Price $2.00. St. Louis: C. V. Mosby Co. 1924.

ORGANOTHERAPY IN GENERAL PRACTICE. Leather. Pages 253 with illustrations. Price $2.00. New York: G. W. Carnrick Co. 1924.

FUNDAMENTALS OF HUMAN PHYSIOLOGY, by R. G. Pearce, B. A., M. D., and J. J. R. MacLeod, M. D., D. Sc., F. R. S. Cloth. Pages 349 with illustrations. Third edition. St. Louis: C. V. Mosby. 1924.

PHYSICAL DIAGNOSIS, by W. D. Rose, M. D. Cloth. Pages 755 with illustrations. Price $8.50. Fourth edition. St. Louis: C. V. Mosby Co. 1924.

ANNUAL REPORTS OF TREASURY DEPARTMENT—1924. U. S. Public Health Service. Surgeon General's office. Cloth. Pages 310. Washington: Government Printing Office. 1924.

LECTURES ON PATHOLOGY, Ludwig Aschoff, M. D. Cloth. Pages 365. 35 illustrations. Price $5.00. New York. Paul B. Hoeber, Inc.

MOBILIZATION OF ANKYLOSED JOINTS, W. Russel MacAusland, M. D., Surgeon in Chief, Orthopedic Department Carney Hospital, Boston. Paper. 200 pages, 120 illustrations.

GOITER: NONSURGICAL TYPES AND TREATMENT, Israel Bram, M. D. Cloth, 480 pages, with numerous illustrations. New York. The MacMillan Company.

ANNUAL REPORT OF TREASURY DEPARTMENT, 1924. U. S. Public Health Service. Surgeon General's Office. Cloth. Pages 310. Washington: Government Printing Office. 1924.

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, April, 1925 No. 4

CONTENTS

Page
Caesarian Section with Special Reference to Indications and Contraindications, Earl C. Sage, M. D.____113
The Use of Hypertonic Salt Solutions in the Treatment of Neurosyphilis, J. Jay Keegan, M. D., and Guy H. Moates, M. D.,__119
Modern Aspects of Nutrition. II. The Pathology of Faulty Nutrition, Food Deficiencies as Factors in Limiting Growth, Victor E. Levine, M. A., Ph. D.____122
Subacute Bacterial Endocarditis, J. C. Waddell, M. D.____127
Obstetrical Procedures, J. R. Taylor, M. D._130
Head Pains of Local Origin, B. A. Smith, M. D. ____132
The Etiology and Prevention of Diphtheria, John D. Reid, B. Sc., M. D.____134
Two Cases of Obscure Anemia, W. D. Lear, M. D., and M. E. Lathrop, M. D.____136
Ochsner's Non-Operative Treatment of Goiter, Again — A Rejoinder by Dr. Ochsner ____138
Page
Nebraska State Medical Association Audit_139
Medico-Legal Defense Department: The Law ____141

EDITORIALS—

The Right of the Essayist to be Heard 144
The Loss of Another University Man__144
What Shall We Do With the Tuberculous? ____144
Delinquent Dues ____145
Dr Inez C. Philbrick, President Nebraska Association of Medical Women__145
What Suggestions Have You to Improve Educational Methods That May Better Prepare Students for the Practice of Medicine?____146
Editorial Paragraphs ____148
Dr. W. H. Wilson Chief Bureau of Health_149
The Western Physiotherapy Association___149
The Societies ____150
Human Interest Tales____152
Necrology ____152

CAESARIAN SECTION WITH SPECIAL REFERENCE TO INDICATIONS AND CONTRAINDICATIONS*

Earl C. Sage, M. D., Omaha, Nebr.

HISTORICAL NOTES OF INTEREST

Ever since the beginning of mankind when Eve was supposed to have arisen from the rib of Adam as so graphically illustrated in some of the early prints, womankind has had a very painful time in bringing her offspring into the world.

The Bible teaches, in Genesis III, 16, in the passage which contains God's malediction to mothers: "I will greatly multiply thy sorrow and thy conception, in sorrow thou shalt bring forth children." But scripture can be answered by scripture, and Simpson on his part quoted Genesis II, 21, in which it is related that when the Lord wished to take a rib from Adam in order to make Eve, he caused a deep sleep to fall upon Adam, and he slept. This citation helped to dispel prejudice in some quarters. It was seen that God himself made use of anesthetics in difficult operations.

Sir James Young Simpson was severely criticised by the religious teachers for relieving the pain of childbirth when he used ether in his midwifery practice—and later substituted chloroform in 1847.

Three hundred years before this, however, it was recognized that some women could not deliver their children through natural birth canals, and that opening the abdomen was necessary. According to Casper Baukin, the first caesarian section upon a living woman was performed in 1500, when Jacob Nufer, a castrator of pigs in Siegerhausen, Switzerland operated successfully upon his wife after she had been given up by widwives and barbers in attendance. The first authentic caesarian section was probably done in 1610 by Trautman in Wittenburg.

It is interesting to look over old engravings, one dated 1647, shows accouchement by a bull and Pigne speaks of a woman of thirty-eight, who in the eighth month of her sixth pregnancy, was gored by a bull, the horn affecting a transverse wound 27 inches long, running from one anterior spine to the other. The woman was found cold and insensible with an imperceptible pulse. The small intestines were lying between the thigh and covered with coagulated blood. In the process of cleansing, a male child was expelled through a rent in the uterus. The woman was treated with the usual precautions and was conscious at mid-day. In a month she was up.

---

*Read before Omaha-Douglas County Medical Society, January, 1925.

She lived 20 years without any inconvenience except that due to a slight hernia in the left side.

Felkin gives interesting pictures and accounts of caesarian section performed in his presence, with preservation of the lives of both mother and child, by a native African in Kahura, Uganda Country. The young girl was operated on in the crudest manner, the hemorrhage being checked by a hot iron. The sutures were made by means of seven thin, hot spikes, resembling acupressure-needles, closing the peritoneum and skin. The wound healed in eleven days, and the mother made a complete recovery. The operator, a "specialist" washed his hands and the field with banana wine (antisepsis); the patient being drunk with the same, (anesthesia).

Thomas Cowley describes the case of a negro woman who, being unable to bear the pains of labor any longer, took a sharp knife and made a deep incision in her belly deep enough to wound the buttocks of her child and extracted the child, placenta and all. A negro horse-doctor was called, who sewed the wound up in a manner similar to the way dead bodies are closed at the present time.

These illustrations suffice to show that caesarian section has always been with us and always will be, and that some of these early operative procedures were about as successful as our more refined techniques of the present day. In passing, it should be related that sutures were first employed in 1769 but did not come into general use until after the appearance of Sanger's epoch making article in 1882, some 43 years ago. Before the work of Porro (1876) and Sanger (1882) the mortality was appalling; in 1867 the mortality was reported as 54% in caesarian operations. In the United States 1878, it was 52%. According to Budin, not a single successful operation was performed in Paris between the years 1787-1876.

MORTALITY

Present day mortality based on a review of 3135 cases, gathered from 16 different hospital centers both in the U. S. and foreign countries, averaged 6.1%. Obstetrical masters in their review of cases placed the mortality anywhere from zero to 14%. It should be remembered that the risk of caesarian section is in direct ratio to four factors:

1. The length of time the membranes have been ruptured.
2. The length of time the patient has been in labor.
3. The number and technic of the vaginal examinations made.
4. The previous attempts at vaginal delivery by forceps.

Polak published the mortality in 2200 caesarian operations which included the work of the best obstetricians and the mortality ranged between 6-14% in women who had been in labor for periods of over 12 hours, because he insists that there are bacteria present in every uterus before the end of the first week.

De Normandie in reviewing the situation in Massachusetts found that in 1922 one birth in every 78 cases was by caesarian section, and that 102 of these caesarian section cases died, with 30 deaths from sepsis and 23 deaths from toxemia. The first way to improve these poor results is to stop indiscriminate operating; to lower the death rate from sepsis, we must stop the late operation; performed when the patient has been in labor some time, and has been subjected to repeated vaginal examinations.

Extra-peritoneal caesarian sections seemed to have a higher death rate than the classic operation, this is probably accounted for because cases subjected to the extra-peritoneal section were in themselves worse risks, on account of infection or bad management before it was decided to operate. In Doderlein and Kustner's 279 extra peritoneal sections the fatal death rate was 5 times higher for the extra peritoneal than for the transperitoneal route. Extra-peritoneal section will, however, save some lives that would otherwise be lost.

RUPTURE OF THE SCAR

The danger of the rupture of the scar in the uterus can also be considered under the heading of mortality. The frequency of rupture is said to be anywhere from 1.5% to 18%. Holland traces the history of a large number of caesarian sections by English operators between 1912-1918, and in this series of 1103 cases, there was a frequency of rupture in 4%.

While caesarian section is the easiest way to deliver the baby, and, everything being favorable, the surest way to secure a live baby, it is not free from danger for the mother. All obstetricians know it is used too freely. If this is true, then what are the accepted indications?

INDICATIONS

The indications may be divided into:

1. Absolute.
2. Relative.

Under the absolute indications we can make 5 headings.

1. Contracted pelvis, conjugate vera less than 7 cm.
2. Cancer of the cervix or malignancy of bladder and rectum with obstruction to the pelvis.
3. Complete obstruction of pelvic canal by a fibroid tumor, ovarian cyst, or tumor of sacrum.
4. Gigantic child whose head will not engage in the pelvic inlet.

5. In a dying woman, where the child may be saved.

RELATIVE MISFITS

Here there is a wide field for discussion. Polak calls these cases misfits, and here the fault may be the pelvis, the child, or the soft parts. Borderline conditions should always be given the test of labor for according to Polak, 81% of these cases come through spontaneously, except in old primiparae. Burgess at the Montreal Maternity writes in this same vein. In 1935 cases of contracted pelvis, 75.5% delivered spontaneously; and 24.5% required operative procedure. Where the conjugate vera was 10.5 cm. or over, all cases delivered themselves spontaneously, while if between 8.5-7.5 cm. then one case in three demanded surgical interferences.

It should always be remembered here that the best pelvimeter is the foetal head and attempts to engage the head under an anaesthetic with the examinating finger in the vagina, gives valuable information as to the passage of the head through the pelvis in borderline cases. This cannot be too forcibly emphasized at this time, when the indications for operative interference appear to rest largely on the fact that there is a contraction regardless of the degree, careful pelvimetry prior to the onset of labor, and section, if necessary, at the elective moment is the only wise course in such cases; the decision should be made before, and not after, labor has progressed until it is a question of performing caesarian section or doing a craniotomy as a last resort.

There are 16 relative indications for caesarian section:

1. Central placenta praevia.
2. Eclampsia or pre-eclamptic stage.
3. Endocarditis.
4. Undilated soft parts after extensive plastic operation.
5. Prolapse of the cord in old primparae with the membranes ruptured and the cervix not fully dilated.
6. Dystocia from previous operations.
7. Complicating tumors incarcerated in the pelvis.
8. Ovarian cysts.
9. Abruptio or ablatio placenta.
10. Rupture of the uterus. Schultz reports 323 cases of rupture of the uterus; with inactive treatment-mortality of 78.8%; with irrigation and drainage, mortality of 64%; the operative treatment mortality of 55.3%.
11. Moderately contracted pelvis where previous labors had ended disastrously.
12. Arrest of the head in the upper third of the birth canal.
13. Impacted shoulder with or without prolapse of the arm when child is alive, and in good condition.
14. Face or brow with chin posterior and the child living.
15. Double uterus.
16. Habitual death of the fetus a few weeks before the end of pregnancy.

CAESARIAN FOR PLACENTA PRAEVIA

Considering in more detail some of these classified relative misfits, we find that S. Bouwer, Groningen, Netherlands, thinks that caesarian section saves more children than any other method of treating placenta praevia. He gives a foetal mortality of 46.58% and a maternal mortality of 7.62%. We find, however, that the treatment of placenta praevia by caesarian section has not been so satisfactory as to warrant its present frequent performance. Capable obstetricians such as Blocker, Hitschmann and Williams report a maternal mortality of less than 3% by established methods other than section, and in view of the fact that foetal mortality will be high in any event, owing to prematurity and the complications incident to low placental implantation, abdominal section should be reserved for the exceptional case and should not be the routine treatment of election.

Other figures on results in the treatment of praevia:

1. Viana, Rome, July, 1924, review of 203 cases, maternal mortality 11%, foetal, 23%.
2. E. A. Stephens, Kentucky, June 1924, 4% maternal, 50% foetal.
3. W. Benthin, Leipsic, May 1923, Konigsberg Clinic Maternal mortality 6%, foetal, 80-90%.

CAESARIAN FOR ECLAMPSIA

In the consideration of caesarian section in the treatment of eclampsia I think it wise to admit that there is no cure-all for every case of this dreaded complication. Foster S. Kellog of Boston states that cutting operations should be avoided whenever possible in toxemia, because there is a higher percentage of sepsis than in normal pregnancies, due probably to the patient's lowered resistance to infections. He studied 400 cases of toxemia and showed that by similar methods of delivery a toxemic with or without convulsions is five times as likely to be septic as a non-toxemic, if she has a normal delivery or low forceps. She is four times as likely to be septic if she has a bag delivery, six times as likely if she has high forceps or version and very much more likely if she has an accouchment force or vaginal caesarian section. She is about three times as likely to be septic as a non-toxemic, if she has an abdominal caesarian section.

In November, 1922, Stroganoff brings down to date his experience with the "prophylactic" method of treating eclampsia, which he has been applying for 25 years in a series of 2,208 cases in all. The mortality of the mothers under it was 9.8% and the mortality of the children 12.9%, less than with other methods.

He used frequent injections of from ¼-1 grain of morphine during the first 2 or 3 hours and supplementary venesection in several cases, and there have been no deaths during seven years except of patients moribund when first seen. The patient also received 75-135 gr. of chloral hydrate a day, in 30 gr. doses, administered one hour after entrance to hospital and 7-13-21 hours later.

The Rotunda method of treating eclampsia, is very similar to Stroganoff's method, on entrance to hospital ½ gr. morphine is given by hypo, and the patient is kept quiet by subsequent injections of from ¼-½ gr. morphine every hour until the respirations drop to eight a minute. The patient's stomach is also washed out, 2 ounces of caster oil are poured down the tube after lavage, and colonic irrigations of 5 gallons of 5% glucose solution are given. If the blood pressure is over 175, phlebotomy is done. 104 cases were treated this way at the New York Lying-In Hospital up to Jan. 1st, 1921. Seventeen mothers died or a mortality of 16.3%. Excluding those who were actually moribund when first seen, 7 in number, and in whom no treatment of any sort would have availed, this leaves a corrected mortality of 9.6% for the net result, with a still birth mortality of 25.4%. When the operative method was used in 250 cases reported by the same writer in 1909, his maternal mortality was 30.8%, certainly a startling difference. This was the experience of McPherson.

Foster S. Kellogg at the Harvard Medical School says that the mortality of these toxemic patients with convulsions in hospital practice for the last 7½ years is 25%; 90% of these die within 36 hours of eclampsia. It is, therefore, one of the most dangerous diseases from which people recover. Whether the treatment is active medical, or active surgical, or active both, it is always active and the term self-limited as applied to eclampsia should be dropped, for psychologically it leads to too much watchful waiting on the part of the general practitioner. Toxemic symptoms call for something to be done when discovered, be it medical, or surgical. Caesarian section affords the quickest means of giving relief, whether it is the best way in the face of results obtained by the above outlined medical procedures, you can judge for yourself.

Kellogg believes at the present time that no toxemic with or without convulsions making progress in dilatation, either by her own pains, or with a Voorhees bag, should be operated to hasten the delivery, even in the presence of impending convulsions, or increasing symptoms, because of the increased danger of sepsis. He also personally believes now that a cutting operation, vaginal or abdominal caesarian, as the case may call for, should be done in cases in which preliminary observations show an unwillingness of that cervix to dilate readily enough to take a large bag. With this exception, he thinks, that bag induction, failing to start labor with catharsis, and allowing the patient if possible to deliver herself, or at least dilate herself fully and come to low forceps, is the choice of procedure in all toxemics with and without convulsion, controlling the convulsions as much as possible with morphia, and in selected cases in which repetition of convulsions is more to be feared than excessive hemorrhage afterwards, with blood letting. He does not believe that the amount of time saved by hurried, difficult operating through the undilated cervix is worth the risk of immediate shock and subsequent sepsis.

To call for a knife and perform a caesarian as soon as we see an eclamptic, in view of the experience of Kellogg, McPherson and Stroganoff, seems a rather hasty and ill-advised procedure. But as DeLee states, one can speak of rational prophylaxis and treatment only when the cause of the disease is known, since we do not know the cause of eclampsia, our treatment is all empiric.

We could argue pro and con concerning the advisability of performing a caesarian section in all the above mentioned relative misfits but we have not time at this meeting. Of course, when the birth canal is mechanically obstructed by a fibromyomata of the uterus, a semi-solid incarcerated ovarian cyst, a tumor of the sacrum or any of the other pelvic bones, so that the foetal head cannot possibly descend into the pelvic canal, caesarian section is the only method available for delivery. The accompanying slides will illustrate the necessity of caesarian section better than I can describe the abnormal conditions of maternal dystocia.

In Polak's article "Is caesarian section justifiable in ablatio placentae " He concludes that a clinical study of a large number of cases has shown it is possible to differentiate between those that can be safely treated on the expectant plan and those that require rapid intrapelvic delivery or caesarian section and hysterectomy. In the former, intelligent expectancy in conjunction with rupture of the membranes, a tight abdominal binder and pituitary extract will effect spontaneous delivery. In the latter cases which show progressive hemorrhage, fall in blood pressure and hemoglobin percentage, section after transfusion is the procedure of choice. The decision between hysterectomy or hysterotomy depends on the condition of the uterine muscle.

In the cases of faulty attitudes, with face or brow or chin posterior, I personally would prefer to do a version. Potter of Buffalo has done more to popularize this method than any other one man.

The slides and case histories of Dr. Palmer Findley on his two cases of double uterus are the best I have ever seen illustrating the necessity of caesarian section in this type of anomaly. His cases show how futile it was to hope for viable babies when delivered through the natural passages, but how successful operative procedures were when dealing with this type of maternal abnormality.

To illustrate habitual death of the fetus a few weeks before the end of pregnancy, I have a case in the hospital now who has had two still births in the last four years. Both babies were born about two weeks before her expected date of delivery. This last time I am confident I heard the fetal heart rate Saturday, and Tuesday, she returned saying she had not felt life. I could not detect the fetal heart sounds, so suggested she go to the hospital for the induction of labor which was accomplished with the castor oil, hot bath, quinine, hot enema treatment, and a 7½-pound baby girl was delivered, showing that it had been dead for several days by the way the skin slipped off, when handling the body. If this patient becomes pregnant again, I will certainly advise a caesarian three weeks at least before delivery. The Wassermanns of both parents are negative, there are no evidences of syphilis, but the liver of this foetus, as well as the placenta, are being searched for spirochaetes.

Caesarian section is indicated whenever it is necessary to take a child from a pregnant woman in order to save it from death or traumatism during its passage through the birth canal. A pelvis having a true conjugate of 7.5 cm. or under, will require a caesarian section some time before the patient goes into labor; it is not necessary to wait for any dilatation. Where the true conjugate is over 7.5 cm. the best pelvimeter is the foetal head. If it cannot be brought to the point where it engages, the case will require careful supervision during the test of labor and the findings may indicate interference. If during the test of labor cases are handled without vaginal examinations, caesarian section can still be safely done. If the case has been contaminated by previous examinations outside the hospital, an extra-peritoneal or transperitoneal caesarian section can still be done; in this case a very low incision should be made. In all suspected septic cases, the Fowler positions used post-operatively will markedly decrease morbidity and mortality.

ONCE A CAESARIAN ALWAYS A CAESARIAN?

One of the disadvantages of performing a caesarian section is the belief in the patient's mind and some of the doctors think that once a woman has had a section, every following pregnancy necessitates a section. The author disapproves of this view and will use the figures of Dr. J. Thompson Schell of New York to illustrate how erroneous this belief is. Out of 167 caesarian operations for various indications, he had 2 cases in each of which the patient had 3 normal deliveries after operation, 2 cases with 2 normal deliveries, and 9 cases with one normal delivery. In addition, there were 15 other cases in which delivery was by the vaginal route, making a total of 34 deliveries by this route.

WHEN IS STERILIZATION INDICATED FOLLOWING CAESARIAN SECTION?

I will refer the reader to Dr. John B. Swift's article in the J. A. M. A., July 19, 1924, where he gives the results of a questionnaire which was sent to 50 members of the American Gynecological Association. To the question "Should one advise a patient having a caesarian section for a definite pelvic indication to be sterilized at her first, second or third caesarian section?" He received 12 replies to the effect that no such advice should be given; 22 of the men believed the patient should be sterilized at a "given" caesarian which varied as follows:

2 suggested sterilization at the first section.
5 at the second.
7 at the second or third.
7 at the third.
1 at the fourth.

Swift believes that no patient should be sterilized without the written consent of both herself and her husband after they thoroughly understand what sterilization means.

In conclusion, an absolute pelvic deformity demands that a woman should have her section before labor sets in, and at a set hour. This is about the only time an obstetrician can work on scheduled time. Conversely, the woman with relative disproportion should be given an adequate test of labor, but not prolonged so that there is the facies of exhaustion nor an abnormally high pulse rise or temperature elevation.

Do not perform caesarian sections indiscriminately because section is more dangerous than other clean, elective abdominal procedures; probably because prenatal work is not routine, interpartum care casual, and the fact that there are bacteria present in every uterus before the end of the first week post partum.

520 Bankers Reserve Life Building.

DISCUSSION

DR. PALMER FINDLEY: One of the things spoken of, "once a caesarian always a caesarian", some years ago I attempted to see if I could find if there had been normal labor subsequent to a caesarian. I found a caesarian was necessary in only 2% of subsequent labors so I believe it should not be over two per cent.

I believe the fact that there has been a caesarian should be considered in subsequent pregnancies. I do not believe it calls for a caesarian in subsequent pregnancies but it does call for unusual precautions.

Every woman who has had a caesarian section should be hospitalized some days before delivery, and I believe she should not have high forcep delivery. However, if the labor progresses safely and expeditiously it is usually safe to proceed, but no long labor should be permitted.

DR. C. W. POLLARD: Caesarian sections, I think, are being performed without any doubt more frequently now than at any previous time. We get good results when we can get the case early enough so as to clean out the bowel as we would in any laparotomy.

I believe in caesarian section in cases of eclampsia, particularly if you get the case early enough and find you are not getting anywhere with treatment.

Now, as to treatment in these cases, I use magnesia sulphate, give 6 or 8 c. c. twice daily and many times I am able to tide over the case so they go full term without need of a caesarian section. There is no question but what it reduces the blood pressure markedly and if there isn't much involvement of the kidney it is well enough to let it go on if you don't have toxic symptoms which show evidence of eclampsia.

DR. F. P. MURPHY: Since we have gone into early history we want to remember that the first caesarian was applied to the male rather than the female, and a long time before the female had the advantage of anesthesia.

Going back a little earlier in history, the first obstetricians were surgeons, the medical men were too prudent or possibly smart enough to let it alone, I don't know which, but anyway the surgeons would attempt anything, which applies largely today. I have often wondered how the general surgeon gets a reputation as an obstetrician. It is a custom that is only too common. The first time he sees the case is when the question comes up of the possibility of caesarian being done. I know of two cases in one hospital in this city which were under the hands of a general practitioner some twenty-four hours, forceps were applied several times and a surgeon, not an obstetrician, was called in. He did the usual thing and the women did the usual thing: one of them one hour after she was delivered.

Now, I don't say there aren't general surgeons who have obstetrical training but they are so few and far between that it is almost an anomaly, but I think that in any case where there is a possibility of caesarian section an obstetrician should be called and not a general surgeon.

DR. W. H. TAYLOR: I don't agree in one or two things.

I want to remark that caesarian has the highest mortality of any abdominal operation.

Second, I think we ought to give these women a fair test of labor and I think it is well to cut out the vaginal examinations. You don't need them That will cut the mortality down.

Dr. Sage suggests setting a certain date, a certain time for a caesarian. I think you will find if you do that in a certain number of the cases that the membranes will not be in shape to separate away if you do not let them into labor. You will find afterward the case doesn't drain and you will have to go in and open the cervix and break up the membrane. I have seen cases in which that had to be done and it increases the possibility of infection.

THE CHAIRMAN: No discussion of obstetrics would be complete without hearing from the Daddy of Obstetrics, Dr. A. B. Somers. Won't you say something, Doctor?

DR. SOMERS: I seem to be the patriarch of this family, some way or other, in the medical profession of Nebraska.

I want to come to the defense of the surgeon.

Caesarian section is absolutely a surgical operation. I never knew anything about abdominal surgery, I didn't have any abdominal surgery, and, as a matter of fact, I didn't know anything about caesarian sections until after I had been teaching obstetrics several years. It was a very peculiar thing that nearly every caesarian section in the city for a period I was called in consultation to see whether it should be done, but I don't call a caesarian section an obstetical operation. It is a surgical operation pure and simple, no more danger in it than any other abdominal section we make unless you have some other infection.

Now, the reason for doing a caesarian section is the death or the impending death of a mother with a live child, or some obstruction, be it bony obstruction, tumor obstruction, or in rare instances an obstruction from a very rigid cervix, and I believe those are about all the indications there are. I do not believe a caesarian is a safe operation in toxemia.

DR. SAGE, (closing): I would like to make one remark. That is that the number of mortalities will be brought down quickly if everyone will realize that every obstetrical case is a surgical case; and be just as clean as he would in a surgical case.

THE USE OF HYPERTONIC SALT SOLUTION IN THE TREATMENT OF NEUROSYPHILIS

J. Jay Keegan, M. D., and Guy H. Moates, M. D.
(From the University of Nebraska College of Medicine, Omaha.)

The treatment of neurosyphilis is still the subject of considerable discussion(1), and investigation is proceeding in a variety of ways to increase the effectiveness of prevention and cure of this distressing malady(2)(3). At present it probably is safe to say that there is no certain cure for neurosyphilis although a fair percentage of cases are symptomatically and serologically benefited by intensive intravenous therapy and a somewhat larger percentage by intraspinal therapy(4). The rather difficult technique of intraspinal therapy precludes its use except in well organized clinics, and the necessary period of hospitalization makes it impossible for many patients to follow this treatment. On this account it is very desirable to find a simple procedure that can be used in general practice and which will increase the effectiveness of the ordinary intravenous therapy.

The use of hypertonic salt solution was first applied to neurology in the study of pressure changes in the cerebrospinal fluid following intravenous injections of a saturated sodium chloride solution(5)(6). It was found that the cerebrospinal fluid pressure was rapidly reduced to zero and that this effect lasted about six hours, when there was a beginning gradual restoration to normal within twenty-four hours. Such a marked alteration in the cerebrospinal fluid pressure suggested a possible concomitant alteration in the secretion and permeability of the choroid plexus during the period of restoration of pressure. Following this idea, Corbus, O'Conor, Lincoln and Gardner(7) demonstrated an increased penetration of arsenic into the cerebrospinal fluid when neoarsphenamine was given six hours after the intravenous injection of one hundred cubic centimeters of fifteen per cent salt solution.

The clinical application of this significant observation seemed worthy of further trial. Thirty-one cases of neurosyphilis were selected from the venereal clinic of the University Dispensary, each of whom had had one or more courses of neo-arsphenamine, mercury and potassium iodide and still retained a positive blood or spinal fluid Wassermann. A complete neurological and serological examination was made of each patient before beginning the salt solution treatment. Of the thirty-one cases twenty-five were diagnosed tabes, four paresis and the remaining two tabo-paresis. Four were so far advanced that they were practically hopeless when treatment was begun and two more failed to continue treatment sufficiently long to furnish a fair estimate of its value. This left twenty-five treated cases which form the chief basis of this report.

The plan of treatment followed that of Corbus et al(7). The patients first received 100 cubic centimeters of 15% sodium chloride solution intravenously, followed six hours later by 0.9 gram of neo-arsphenamine. These injections were made at weekly intervals. At the beginning a few rather severe reactions from the salt injections were encountered. Two cases developed a severe chill and temperature of 104 degrees four hours after the injection. They had nausea and vomiting, excruciating headache and were prostrated about six hours. They were hospitalized and recovered within twenty-four hours. Investigation of the cause of these distressing reactions led to the discovery that the 15% salt solution, prepared from freshly distilled water and C. P. sodium chloride and autoclaved, was highly acid in comparison to the blood. The hydrogen ion concentration of this particular lot was plus 6.0 the blood being plus 7.4. In all subsequent injections the sterilized salt solution was accurately titrated and adjusted to a Ph value of plus 7.4. No subsequent reactions have occurred.

After this observation was made two articles appeared in the literature emphasizing the significance of the hydrogen ion concentration of intravenous solutions in producing toxic reactions(8), and discussing the use of buffer solutions in such fluids(9). Investigation of the use of a buffer substance in the salt solution led to the selection of sodium bicarbonate. It was found that the addition of 0.175 cubic centimeters of a 10% sterilized sodium bicarbonate solution to every 100 cubic centimeters of the 15% salt solution before sterilization resulted in a reaction of Ph plus 7.4 after sterilization. It also was found that such a solution maintained this alkalinity on standing a week or more at room temperature or on re-sterilization.

With this modified titrated salt solution there has been no untoward reaction in a single instance of over 300 injections. Minor reactions have occurred as moderate pain radiating up the arm and a sensation of warmth and flushing during the injection. These have promptly disappeared on completion of the injection and the patients were allowed to be up and around while waiting for the neo-arsphenamine six hours later. An intense thirst was present during the interval, but no water was given till after the neo-arsphenamine injection. The accompanying table gives the diagnosis, serology of blood and cerebrospinal fluid before treatment, the number of salt solution injections, and the serology after treatment.

TABLE NO. 1

		SEROLOGY BEFORE TREATMENT						SEROLOGY AFTER TREATMENT					
			CEREBROSPINAL FLUID						CEREBROSPINAL FLUID				
Case No.	Diagnosis	Blood Wass.	Wassermann	Cells	Glob	Gold Curve	No. Salt Inj.	Blood Wass.	Wassermann	Cells	Glob	Gold Curve	Clinical Improvement
5	Paresis	4+	.1+.2+.4+.8	28	3+	5543210000	27	4	.1+.2+.4+.8+	12	2+	5543210000	slight
8	Tabes	4+	.1—.2—.4—.8—	16	2+	0112311000	13	neg	.1—.2—.4—.8—	2	neg	0000000000	marked
9	Tabes	3+	.1+.2+.4+.8+	10	3+	1122322100	6		.1—.2—.4—.8—	1	neg	0012110000	moderate
10	Tabes	neg	.1+.2±.4+.8+	4	2+	0012222100	8	neg	-------------	--	---	----------	none
11	Tabes	4+	.1+.2±.4+.8+	2	3+	----------	25	neg	.1—.2—.4—.8—	2	neg	0000111100	marked
*19	Tabes	neg	.1—.2±.4+.8+	5	2+	0112310000	4	-	-------------	--	---	----------	none
20	Tabes	3+	.1+.2+.4+.8+	26	3+	0122332110	9	neg	.1—.2—.4—.8—	3	neg	0000011100	moderate
21	Tabes	4+	.1±.2+.4+.8+	18	3+	----------	18	1	-------------	--	---	----------	marked
22	Tabes	4+	.1+.2+.4+.8+	13	4+	0123432100	25	1	.1+.2+.4+.8+	0	neg	3222100000	moderate
24	Tabes	4+	.1±.2+.4+.8+	100	4+	0011232100	8	2	.1—.2—.4±.8+	77	3+	0112321100	slight
26	Tabes	neg	.1+.2+.4+.8+	35	3+	0112221100	12	neg	.1—.2—.4—.8—	1	neg	0011100000	marked
27	Paresis	4+	.1+.2+.4+.8+	19	4+	5555431000	42	2	.1—.2—.4±.8+	4	neg	4333221000	marked
28	Tabes	2+	.1—.2+.4+.8+	24	3+	1122321100	18	neg	.1—.2—.4+.8+	1	neg	1122221100	moderate
29	Tabes	neg	.1±.2+.4+.8+	60	3+	1122221100	11	neg	.1—.2—.4—.8—	4	neg	2222110000	marked
30	Tabes	neg	.1—.2—.4—.8—	19	2+	0112211000	11	neg	.1—.2—.4—.8—	4	neg	1110000000	marked
31	Tabes	1+	.1—.2+.4+.8+	15	2+	1122332100	20	neg	.1—.2—.4±.8+	5	neg	1111000000	moderate
32	Paresis	4+	.1+.2+.4+.8+	225	4+	5554332100	12	4	.1+.2+.4+.8+	8	2+	4443321000	none
*34	Tabes	neg	.1+.2+.4+.8+	37	3+	0112232100	6	neg	.1—.2—.4—.8+	2	neg	0011211000	slight
35	Tabes	1+	.1+.2+.4+.8+	35	3+	2345543211	7	neg	-------------	--	---	----------	moderate
36	Tabes	neg	.1±.2+.4+.8+	15	3+	0123321000	7	neg	.1—.2—.4±.8+	3	neg	0112211000	moderate
*37	Tabes	neg	.1+.2+.4+.8+	39	3+	0123322100	2	-	-------------	--	---	----------	none
*38	Paresis	4+	.1+.2+.4+.8+	7	4+	5543221100	18	-	-------------	--	---	----------	none
39	Tabes	neg	.1+.2+.4+.8+	276	4+	1123321100	7	neg	.1—.2—.4±.8+	4	neg	0011211000	marked
*40	Tabes	neg	.1—.2+.4+.8+	---	-	----------	5	-	-------------	--	---	----------	slight
41	Tabes	2+	.1—.2±.4+.8+	14	2+	0112321100	10	3	.1—.2—.4±.8+	40	2+	0112211000	none
*42	T.-P.	neg	.1—.2±.4+.8+	22	3+	3332110000	2	-	-------------	--	---	----------	none
43	T.-P.	neg	.1+.2+.4+.8+	56	3+	0123432100	8	neg	.1+.2+.4+.8+	2	neg	0112321100	slight
44	Tabes	4+	.1—.2—.4±.8+	19	2+	0122332110	7	neg	.1—.2—.4—.8—	3	neg	0000111000	marked
45	Tabes	neg	.1—.2—.4+.8+	75	3+	0112321000	7	neg	.1—.2—.4—.8—	6	neg	0001110000	marked
46	Tabes	neg	.1—.2±.4+.8+	15	3+	1122211000	6	neg	.1—.2—.4—.8+	12	neg	0112232100	slight
47	Tabes	neg	.1±.2+.4+.8+	172	3+	0122321100	10	neg	.1—.2—.4—.8—	2	neg	0011111110	marked

*Case unsatisfactory on account of advanced lesion or discontinuance of treatment.

DISCUSSION

Cases No. 19, 34, 37 and 38 were so far advanced when treatment was begun that little benefit could be expected. Cases 40 and 42 did not continue treatment sufficiently long to expect any effect. Of the remaining twenty-five cases, numbers 8, 9, 11, 26, 29, 30, 44 and 45 were distinctly improved clinically and became negative serologically. Cases number 5, 20, 21, 22, 24, 27, 28, 31, 35, 36, 39, 43, 46 and 47 were variably improved and able to return to regular work. They remained positive serologically. Cases number 10, 32 and 41 showed no improvement. In view of the distinct clinical and serological improvement in this number of cases which were stationary under the ordinary antisyphilitic therapy, the conclusion seems justified that the effectiveness of neo-arsphenamine in neurosyphilis is increased by the preceding salt solution injection. Sufficient time has not elapsed to interpret the permanency of the improvement.

There are a few objections to the use of hypertonic salt solution, although toxic reactions have been eliminated by titration and adjustment of the hydrogen ion concentration. The most serious objection is the thrombophlebitis that almost constantly arises when the salt is followed by arsphenamine. Nearly every case under treatment developed occlusion and fibrosis of the veins at some time, which made intravenous therapy difficult to continue. This occlusion was partly relieved by heat and rest but it was found almost impossible to inject arsphenamine into the restored thick walled veins on account of the immediate and sustained vasomotor contraction at the place of entry of the solution. This reaction was not present in so great a degree with neo-arsphenamine.

It is questionable if the increased effectiveness of this salt solution method of treatment is sufficient to recommend its use except on an experimental basis. Certainly, thorough ordinary intravenous treatment should be used first and the salt solution possibly applied to refractory cases where intraspinal therapy cannot be given. Greater promise in obtaining effective treatment in neurosyphilis rests in early diagnosis and in drugs such as tryparsamid(3), and sulpharsphenamine(10), which in themselves have a greater penetrating power into the cerebrospinal tissues and fluid spaces.

Upon completion of the preceding work three cases of paresis and one of tabes were selected who had shown little or no serologic improvement under the combined salt and neoarsphenamine treatment but who were considerably improved clinically. These cases, No. 5, 27, 48 and 46, were placed upon a course of intra-cisternal salvarsanized serum injections followed by intravenous hypertonic salt solution. This treatment is a modification of that reported by Wynn(11) and is based upon the experimental work of Foley(12) who presented evidence that a dye in the cerebrospinal fluid penetrates the nerve tissue in marked degree when followed by an intravenous injection of hypertonic salt solution. Wynn reported unfavorably upon this procedure on account of the lack of pronounced clinical improvement and on account of the disagreeable toxic symptoms associated with the salt solution injections.

The detailed procedure in these four cases consisted of first an intravenous injection of 0.9 gram of neo-arsphenamine followed by the withdrawal of 50 to 75 cubic centimeters of blood thirty minutes later. The following morning 25 cubic centimeters of serum were separated from this blood, strengthened by the addition of 0.1 to 0.6 milligrams of alkalinized arsphenamine and inactivated at 55 degrees centigrade one-half hour. Cisternal puncture was then performed(13) about 25 cubic centimeters of fluid removed for specimen and 25 cubic centimeters more mixed with the 25 cubic centimeters of salvarsanized serum and reinjected by gravity pressure. No complaint was made by the patients during these injections. Thirty minutes later 100 cubic centimeters of carefully titrated 15% sodium chloride solution was given intravenously. No symptoms developed from these salt solution injections except the usual mild pain in the arm and flushing which disappeared on completion of the injection. Occasionally the patient vomited once on returning to the ward and complained of slight headache. They left the hospital early the following morning to engage in their usual work. The absence of reaction in the seventeen such treatments given to these four patients is contrary to the observation of Wynn(11). The explanation probably rests in the careful titration and adjustment of the hydrogen ion concentration of the salt solution which was used in this work.

The effect of this form of treatment in these four cases was not sufficiently beneficial to warrant its continuance. Case No. 5, received four treatments, case No. 27 four treatments, case No. 48 six treatments and case No. 46 three treatments. The cases selected, however, were those which had shown no serological improvement under other treatment.

REFERENCES:

1. Soloman, H. C. A Review of Recent Literature on Neurosyphilis. Arch. of Neurol. and Psych., Feb., 1922, VII, 235.

2. White, E. C., Hill, J. H., Moore, J. E., and Young, H. H. Flumerin: A New Mercurial for the Intravenous Treatment of Syphilis.

3. Lorenz, W. F., Loevenhart, A. S., Bleckwenn, W. J., and Hodges, F. J. The Therapeutic Use of Tryparsamid in Neurosyphilis, J. A. M. A., May 26, 1923, 80, 1497.

4. Fordyce, J. A. Intraspinal Therapy in Neurosyphilis. Am. Jour. Syph. 1919, 3, 3.

5. Weed, L. H., and McKibben, P. S. Pressure Changes in the Cerebrospinal Fluid Following Intravenous Injection of Solution of Various Concentration. Am. Jour. Phys., 1918, 48, 512.

6. Foley, F. E. B. Clinical Uses of Salt Solution in Condition of Increased Intracranial Tension. Surg. Gyn. and Obst., Aug., 1921, 31, 126.

7. Corbus, B. C., O'Conor, V. J., Lincoln, M. C., and Gardner, S. M. Spinal Drainage Without Lumbar Puncture. J. A. M. A., 1922, 78, 264.

8. Williams, J. R. and Sweet, M. Hydrogen ion Concentration Studies on Distilled Water, Physiologic Sodium Chloride, Glucose and Other Solutions Used for Intravenous Medication. J. A. M. A., April 8, 1922, 78, 1024.

9. Mellon, R. R., Slagle, E. A., and Acree, S. F. The Practical Application of Buffers in the Regulation of the Hydrogen ion Concentration of Intravenous Solutions. J. A. M. A., 1922, 78, 1026.

10. Voegtlin, C. Penetration of Arsenic Into the Cerebrospinal Fluid. Pub. Health Rep. May 11, 1923, 38, 1003.

11. Wynn, J. Observations Following Intravenous Injections of Hypertonic Salt Solution in Cases of Neurosyphilis. Arch. Int. Med., 1922, 29, 72.

12. Foley, F. E. B. Alterations in Currents and Absorption of Cerebrospinal Fluid Following Salt Administration. Arch. Surg. 1923, 6, 587.

13. Keegan, J. J., and Riddell, T. E. Lumbar Spinal Puncture and Cisternal Puncture. Neb. State Med. Jour., 1923, 8, 129.

There are two ways to get ahead in this country. One is to sell bootleg and the other is to drink it.—New York American.

It's funny about nature, making prunes more healthful than strawberries.—Toledo Blade.

MODERN ASPECTS OF NUTRITION

II. THE PATHOLOGY OF FAULTY NUTRITION

Food Deficiencies as Factors in Limiting Growth.

Victor E. Levine, M. A., Ph. D.,
Professor of Biological Chemistry and Nutrition, College of Medicine, Creighton University, Omaha, Nebraska.

INTRODUCTION

In a previous article we pointed out the fact that personal habit dictates our likes and dislikes with reference to food. Eating too little or too much is also a matter of habit. We can even learn to like a wholesome food, against which we have acquired an unexplainable prejudice. Custom also is responsible for a great many dietary peculiarities. Most people have been brought up on muscle cuts of meat. McCollum has shown that this type of animal food is, however, by no means as nutritious as the organs like liver, spleen, lung and brain. But as a rule we do not use them, for we lack the accustomedness to them. To the great majority of mankind the idea of eating horseflesh is repulsive, yet numbers of people in various parts of Europe have conquered the initial repugnance and are finding this animal food quite as pleasant as cow's meat. On the other hand, snail soup is relished in Italy, while down at Marseilles gourmands feast on angleworms and find them appetizing.

Suffice it to say that we have already submitted abundant evidence in an endeavor to show up the futility of relying upon impulse in relation to food. The misleading cues of our natural desires impel us to seek information as to what constitutes adequate nutritional needs through the experimental method. We are now in a psychological frame of mind to listen to a summary of the modern conception of the adequate diet, acquired in the last ten years as a result of painstaking experiments and observations on animals and on human being. Before presenting, however, this recently garnered knowledge let us digress to paint the high spots in the pathology of faulty nutrition.

THREE TYPES OF DISEASE

On the basis of primary origin we may divide disease into three types. The lines of demarcation for each type are arbitrary, and it is, indeed, often difficult to avoid overlapping. In the first type the basis of the pathologic condition is primarily anatomical derangement, congenital or acquired, microscopic or macroscopic. In this class we may include congenital or acquired deformities, organic lesions of the nervous system, neoplasms of benign or malignant character, and all sorts of conditions due to physical agencies, such as light, heat, cold, mechanical pressure, or presence of some foreign inert material. In the second type of disease the basis of the pathological condition is a pharmacologically active substance foreign to the organism, such as a chemical poison or a toxin produced as a result of invasion by microorganisms or some higher form of parasitic life. In this category may also be included as a sub-division the allergic syndromes, such as hay fever, asthma, eczema, urticaria, angioneurotic edema, certain gastro-intestinal upsets, and some types of migraine. These allergic conditions may be of bacterial origin, or they may be due to such foreign substances as hair of domestic animals, dust, etc., or to ordinary foods, which set up no symptoms whatever in most individuals, but which seem to act like foreign substances to others that are highly sensitized to them.

In the third type of disease the basis is a qualitative or quantitative change in the chemical ingredients of the body. If the pathological picture is brought about by alterations in the biologic machinery, that is by alterations in the functional activity of the organs, we meet a number of conditions known as diseases of metabolism. This type of disease is most liable to strike the nervous system, the heart, the liver, the kidney, the pancreas, the spleen, the lymph glands, the osseous system, the muscular system and the organs of internal secretion. Metabolic disease of the endocrines is characterized by excess (hyperfunction), by insufficiency (hypofunction) or by a deviation from the normal composition (dysfunction) of the specific hormone involved. With respect to the functional diseases the human body may be likened to an automobile in which some important part has undergone deterioration with resultant loss in efficiency. Diseases of this class may show change in composition somewhere in the organism, in spite of a proper food intake.

NUTRITIONAL DISEASES

If, however, the pathological picture involves factors external to the organism, such as improper, insufficient or excessive food, we begin to deal with a number of nutritional conditions. The organism may then be likened to an automobile, excellent internally but not functioning smoothly as a result of insufficient or improper oil or gasoline. The nutritional inefficiencies embrace a whole set of abnormal conditions caused by biological insults to the gastro-intestinal tract. If the pathology is due to the improper quantity or quality in the food we encounter the so-called deficiency conditions, such as complete starvation and partial starvation as is the case with beri-beri or polyneuritis, sprue, scurvy, xerophthalmia, rickets, osteomalacia, pellagra, hunger edema, which is identical with "war edema" carbohydrate dystrophy, marasmus or athrepsia, chlorosis, simple or endemic goiter, dehydration fever, and the ketonic type of acidosis, known as ketosis or ketonemia, which results from the intake of carbohydrate insufficient to burn the fat ingested. This form of acidosis or acidemia occurs in diabetes as a result of metabolic derangement, or nutritionally in children or adults taking one-sided diets, in complete starvation, and in insulin poisoning. According to recent investigations it seems likely that we will have to include tetany, spasmophilia and muscular dystrophy in the list of nutritional deficiencies.

MALNUTRITION DEFINED

The term malnutrition is often used in a vague sense. For this reason it is necessary to define it. In this paper and in subsequent ones we shall use it in its broadest sense to indicate a condition in which the cells of the body fail to grow or maintain themselves by reason of being overburdened with excessive nutriments or by reason of receiving nutriments insufficient in quantity or improper in quality. The term, therefore, according to our usage will include overnutrition as well as undernutrition, besides deficiencies in specific dietary factors.

MALNUTRITION OF SECONDARY ORIGIN

It is not to be overlooked that disease due to anatomic pathology or to toxemia induced by a foreign body, animate or inanimate, or to functional derangement may be complicated secondarily by malnutrition. Pancreatic insufficiency or obstructive jaundice may result in lack of delivery of lipase or bile salts to the digestive mixture of the small intestine. As a consequence, fat, undigested and unassimilated, will be lost with the feces. In diabetes the organism is unable to utilize carbohydrate to the same extent as the normal individual. Since glucose acts as a protein sparer it is readily seen why for one reason the diabetic may lose in weight. Since the normal diet must contain enough carbohydrate to make impossible the formation of ketone bodies from the fatty acids, it is also seen why diabetes may bring with it a ketosis. Indeed, the complications to be dreaded in diabetes are those brought on by malnutrition — the loss in weight, the great susceptibility to infection, gangrene, tabes diabeticum, retinitis, and the coma induced by the ketonic type of acidosis. Insulin and also intarvin are valuable adjuvants in the treatment of diabetes, for they raise the nutritional capacity of the patient.

We must not forget also that malnutrition may be brought about secondarily by disturbance in the gastro-intestinal tract. It is not to be overlooked that even when food intake is adequate qualitatively and quantitately we may still be, as emphasized by Professor James F. McDonald(2), in a state of inadequate nutrition. Persistent vomiting, diarrhea or alimentary stasis, may leave the body very much depleted. Gastro-intestinal derangement is, indeed, common to many diseases. Carcinoma, pernicious anemia, the acute and chronic infections of lung, liver, heart, and nervous system—all sooner or later leave their mark on the gastro-intestinal tract. Purely psychic conditions may give rise to changes in motility, in the composition of the secretions and in depressed appetite (anorexia nervosa). Impairment of purely nervous origin may disturb the sympathetic-parasympathetic equilibrium and bring about many functional abnormalities among which may be mentioned cardiospasm, pylorospasm or enterospasm. Gastro-enteric upsets may result reflexively from a pathological gall bladder, appendix, some pelvic organ, or from any area reflexogenic to the digestive tract. Organic lesions in the buccal cavity, in the pharynx or the aesophagus may bring about dysphagia and consequent diminution in food intake. Constrictions following corrosive poisons, or resulting from intramural malignancies or from extramural pressure due to neoplasms, aneuryisms or adhesions may undermine the normal functioning of the alimentary tract to such a degree as to render it inadequate to digest or absorb the nutrients necessary for growth or maintenance.

STRIKING POINTS ABOUT MALNUTRITION

We wish to point out two very striking things about malnutrition, which are of interest to the physician. In the first place there is a marked difference between nutritional disorders observed in laboratory experiments and those occurring among human beings. In the laboratory the experimenter can prepare a diet deficient in but one respect and he is, therefore, able to produce the typical conditions of polyneuritis, xerophthalmia, rickets, scurvy, chlorosis, and simple goiter. In the case of the human being there is often more than one deficiency in the diet and it is not often that one gets the pure type of disease as with laboratory animals. Polished rice is deficient in vitamin B, vitamin A, in mineral content, and in superior protein. People subsisting largely on this food may be suffering from a mixture of insufficiency diseases. That such mixed hypoavitaminoses or avitaminoses occur frequently may be seen from the literature. Such cases were reported during the siege of Paris, 1871, by Delpech(3) and also by Bucquoy(4). Scherer(5) observed an outbreak of scurvy in German Southwest Africa with a death rate of 30 per cent. The disease resulted from an exclusive rice diet and the patients showed signs and symptoms both of scurvy and beriberi. Fleming, Macaulay and Clark(6) reported thousands of cases among miners in South Rhodesia in which beri-beri developed at first and scurvy somewhat later. Darling(8) regarded these South African cases as scurvy complicated by beri-beri. Greig(9) observed in epidemic dropsy, scorbutic symptoms with bleeding of the gums in 10 per cent of his cases. Pellagra, according to Goldberger(10) and also to McCollum(1), seems to result from a diet deficient in many respects, in proteins of superior biologic value, in vitamins and inorganic components.

What we wish to emphasize by these statements is the fact that human cases of malnutrition frequently are due to a lack or insufficiency of more than one dietary essential. It is, therefore, within sound therapeutic procedure to give a child suffering from rickets, not only cod liver oil but other food factors such as vitamin B and C of orange juice, as well as other dietary principles that would go to make the diet of the patient adequate in all respects. An individual suffering from scurvy should have his diet enriched by such highly anti-scorbutic foods as lemons, oranges or tomato juice, but it would be advisable to give him cod-liver oil as well. In xerophthalmia not merely addition of butter fat or cream to the diet should be the ideal treatment, but any other deficiency in the diet should be made good. This idea of strengthening all along the line has met great success in the handling of cases of pellagra. In general it may be said that a patient suffering from a clearly recognizable deficiency disease, such as scurvy, or rickets, should be given specific dietetic treatment to correct for the missing food factor and general dietetic treatment to bring the nutritional requirements of the individual to the biologic optimal.

COMMON FACTORS IN THE PATHOLOGY OF MALNUTRITION

The second striking point concerns the pathology of malnutrition. It is very interesting that no matter what the deficiency or insufficiency may be, every nutritional condition, aside from the few differentiating signs and symptoms, show a unique sameness in the general pathological picture. Thus insufficient quantity in food intake, deficiency in iron or calcium or any of the vitamins lead to lack of growth, to gastro-intestinal derangements, to greater susceptibility to infection, to mental and neurological states deviating from the normal, etc. It is, therefore, sometimes difficult to differentiate in a clinical way one form and malnutrition from another. Even lack of iron, according to McGowan and Cinchton(10) may simulate conditions characteristic of an avitaminosis.

By reason of the existing common pathological factors concerned in malnutrition it is not necessary to burden ourselves with details in reference to the many conditions due to nutritional defects. We shall at present confine ourselves to the relation of the various food components to the growth process.

EFFECT OF DIET ON GROWTH

One of the first and earliest signs of malnutrition in the young is lack of growth in relation to the weight and height ratio. The food factors responsible for limitation in growth are: (1) insufficiency in total food intake (caloric shortage); (2) insufficiency of protein intake (negative nitrogen balance); (3) intake of protein, adequate in quantity but poor in quality (protein inferiority); (4) insufficiency or deficiency in vitamin needs (hypovitaminosis or avitaminosis); (5) insufficiency or deficiency in inorganic components.

PROTEIN

We can readily understand how food intake lower than the actual biologic need would tend to cause cessation of growth. Biologic structure, unlike after-dinner speeches, must be built out of some material at the disposal of the organism. The six biologic types of brick and mortar are water, inorganic substances, lipins, carbohydrates, proteins, and vitamins. Of these six, the proteins form the largest and most important nitrogen carriers. The term protein signifies of first importance, and, indeed, that title it deserves by reason of the fact that it contains nitrogen, the element which constitutes the keystone of the protoplasmic arch. It is true that nitrogen may be found in some lipins, as in phospholipins, in certain carbohydrates, as in glucosamine and in the vitamins. But the quantity available from those sources is very negligible and by no means suffices to build new tissues or to make good the wear and tear of old ones.

NITROGEN REQUIREMENTS OF THE BODY

In order to ascertain whether a person is getting enough protein to maintain body weight or to allow for an increase, we determine by analysis the nitrogen of the food ingested and the nitrogen eliminated from the gastrointestinal tract (feces) and from the renal tract (urine). When the nitrogen output is equal to the nitrogen intake, we say that the individual is on a diet capable of maintaining nitrogen equilibrium. In such condition an adult makes neither gains nor losses in weight. Since carbohydrate and, to a lesser extent, fat act as protein sparers, it follows that less protein is required in the presence of these nutrients to maintain nitrogen equilibrium.

In the early years of life, however, when growth is a continuous process, or in convalescence in young or in old, there exists a positive nitrogen balance. In this state the nitrogen output is less than the intake, for some of this element is retained for biologic building. A negative nitrogen balance, however, indicating an elimination of nitrogen greater than the intake, tells the story of an organism compelled to break down its own cells to make good a deficit necessary for the maintenance of its manifold biologic activities. Such negative balance must necessarily lead to loss of weight in the adult and in the young. In the latter insufficient protein also operates to prevent normal growth. From the standpoint of negative nitrogen balance, it is not surprising at all to find that an individual consuming three or four thousand calories per day may even suffer loss in weight if the food supplied is insufficient in protein requirement!

INDISPENSABLE AMINO ACIDS

A third consideration in the problem of growth concerns the type of amino acid contained in the protein molecule. Osborne and Mendel(11) made a brilliant contribution to the science of nutrition when they demonstrated that the proteins are not all equally nutritive in value, but that their biologic efficiency depends upon the amino acids present. According to them the rate of growth appears to be limited by the proportion of the amino acids, cystine, tryptophane and lysine. More recently Ackroyd and Hopkins (12) have shown that histidine and arginine are also indispensable, and still more recently Barnet Sure(13) has added proline to the list of protein constituents involved in the growth process. It seems that some amino acids, like glycocol and alanine, can be synthesized by the organism, while others must be supplied preformed in the food intake. Proteins rich in the amino acids incapable of synthesis may be regarded as superior proteins.

THE BIOLOGIC VALUE OF PROTEINS

The problem concerning the biologic value of the proteins has received the attention of many investigators, among them Lafayette B. Mendel and Elmer V. McCollum. McCollum and Simmonds have shown that the proteins of whole wheat, milk, eggs and the visceral organs, like kidney and liver, and muscle meat are of unusual value. The rapid growth of the young on a milk diet indicates that the proteins of milk are of excellent nutritive quality. Proteins lacking entirely one or more of the essential amino acids or relatively poor in them may be regarded as inferior proteins. It has long been pointed out by the Yale investigators that gelatin cannot support growth for it not only lacks tyrosine, but also tryptophane and cystine. Gliadin, from wheat, zein from corn, hordein from barley, are also inferior proteins on account of a shortage of lysine and tryptophane. The proteins of cereals and legumes, according to McCollum and Simmonds(1), are not of the same nutritive caliber as those of dairy products and of flesh food. The legume proteins are relatively deficient in cystine. Barley and rye have slightly better proteins than the other cereals. Nut proteins are fair in quality. The following scheme of McCollum and Simmonds give in a relative way the nutritive value of some proteins they investigated. The best ones are to be found at the left.

Beef Kidney	Milk	Muscle (Round Steak)	Maize	Soy Beans
Wheat	Liver (Beef)	Barley Rye	Oats	Navy Beans Peas

Thomas(14) is another investigator who calculated the biologic value of different proteins. He determined the minimal amount of each, necessary to prevent loss of tissue protein from the body on a diet of starch and sugar. On the basis of the value of 100 to milk proteins, the other foods with reference to protein efficiency may be arranged in the following order:

Milk protein	100	Yeast	71
Meat protein (ox)	104	Casein	70
Fish protein	95	Peas	56
Rice protein	88	Wheat flour	40
Potato protein	79	Corn Meal	30

The results of Thomas have been quoted widely. Recently more valuable data has been procured by Hinhede(15) and by Sherman(16). From the result of these investigators it seems established that the most efficient proteins are those from animal viscera, from muscle cuts, from milk, eggs, and from whole wheat.

The practical application derived from the knowledge of the biological value of proteins lies in our ability to supplement the deficiencies of one protein or another in order to arrive at a diet supplying protein with the proper proportion of indispensible building stones (amino acids). In a diet rich in seeds, cereals and legumes, the protein deficiency is best corrected by including in the diet animal protein like liver, kidney or muscle. The lactalbumin of milk supplements the inadequate proteins of corn most satisfactorily. Milk is an exceptionally good supplement for a diet, the proteins of which are poorly constituted. Owing to the nutritional superiority of milk with reference to protein, vitamin A and calcium, and of leafy vegetables with reference to water-soluble B and C, calcium, iron, and indigestible residue, these foods should be used to supplement the ordinary diet in order to provide most effectively for the needs of growing children, and pregnant or nursing mothers. As a matter of fact any patient showing signs of malnutrition can have his defects in diet, corrected by liberal addition to it of dairy products - milk, butter, cheese, eggs - and leafy vegetables.

PELLAGRA

Very recently the conception of the biologic efficiency of protein has again sprung into the lime-light with reference to the cause of pellagra. This disease in the course of the last twenty years has increased with great leaps. About 500,000 cases have been recorded within this time. In 1916 pellagra ranked second as a cause of death in South Carolina, third in Alabama and fourth in Mississippi. The disease occurs in every state in the union. In the words of Goldberger: "For the cure of pellagra the only medicine we have is diet". It has been observed in children under the age of one year, but it is of rather frequent occurrence in the second year and fairly common between two and twelve years. It occurs in all periods of life. Between the ages of twenty and forty-five it is more common among women than among men. The incidence gradually decreases until the age of fifty the two sexes are approximately equal. In old age the onset is slightly more common in men than in women.

Pellagra has long been considered by nutritionists as a disease of dietary origin. The diet of pellagra victims is almost invariably restricted and ill-balanced. Fat and carbohydrates abound, but animal and dairy protein is low. The great bulk of the food of pellagrins consists of wheat flour, cornmeal, potatoes, salt pork, and boiled vegetables in the summer and cabbage in the winter. Goldberger(17) and others maintain that pellagra is a disease brought on by absence or poverty in the diet of proteins of high biologic value. It is to be noted that the diet conductive to pellagra lacks fresh meat, fish, eggs, milk or whole wheat. This type of diet is not only poor in superior protein but also in water-soluble and fat-soluble vitamins and in mineral content. Pellagra, therefore, is a disease of amino acid deficiency primarily or one of amino acid deficiency complicated by other dietary defects.

This view of the etiology of pellagra is supported very strongly by Boyd(18), by Wilson(19), by Chick and by Hume(20). Boyd, who has had wonderful opportunity to study the disease among the Turkish prisoners in Egypt during the last war, emphasized the quality rather than the quantity of protein as an etiologic factor. He found no relation between incidence of pellagra and total calorific value, fat content or total protein content. Light, however, with reference to the connection between diet and pellagra came only when he applied to the problem the conception of the biological value of protein. He regarded meat as having a biological value of 1.0, milk of 0.96, beans of 0.8 and corn (maize) of only 0.298. According to Boyd, when the biologic value of the protein in a diet falls below 40 pellagra begins to make its appearance. In treatment he has observed that an increase in the diet of protein of high biological value caused a most rapid improvement. Since gastric digestion in pellagra is frequently below normal on account of hypoacidity or anacidity, the administration of hydrochloric, he found also helpful.

Wilson analyzed the nutritional habits of pellagrous and non-pellagrous patients from the point of view of protein superiority. He came to the conclusion that pellagra was brought on when the biologic value of the protein ration fell below a certain level. This view harmonizes with many of the known facts relating to the disease. Corn has often been held up as responsible for pellagra. It certainly may be the one, for corn has decidedly inferior protein. It is a known fact that pellagra rarely occurs among populations partaking of fresh meat and such dairy products as milk, cheese and eggs. The experiments of Chick and Hume also give support to the observations of Goldberger and his associates, of Boyd and of Wilson. They fed specific proteins and amino acids to monkeys rendered pellagrous by diets containing proteins of low biologic efficiency. Administration of tryptophane to one monkey held off death for many weeks, and to another monkey with severe skin lesions 5 to 10 grams of casein produced a cure.

Insufficiency of proper protein intake may result on an adequate diet if assimilation becomes defective as a result of gastro-intestinal derangement. Clinicians have reported cases of pellagra with a history of chronic diarrhea and gastro-intestinal affections of long duration. Vedder(20) maintains that in many cases of pellagra habit involving some peculiarity of taste, or indigestion has led the patient to live on a lop-sided diet. Roberts(21) reports 25 cases from private practice. The patients were financially able to provide themselves with an adequate diet, but they chose to live on one improperly balanced. (To be Continued)

SUBACUTE BACTERIAL ENDOCARDITIS*

J. C. Waddell, M. D., Beatrice, Nebr.

Synonyms: "Endocarditis lenta;" "Nonhemolitic streptococus Endocarditis;" "Libman's Disease;" "Chronic Bacterial Endocarditis."

Osler first described the condition in 1885. Libman has probably made a more extended study of the disease than any other man. He speaks of the condition always as subacute bacterial endocarditis considering only those cases chronic that live more than one year. First, this condition must be sharply differentiated from acute rheumatic endocarditis and acute ulcerative or malignant endocarditis.

1. Endocarditis which accompanies acute rheumatism comes on more suddenly and with more marked heart symptoms. Rheumatic endocarditis shows bacteria free, heart vegetations and serum. It is either fatal within a few months or the inflammatory symptoms more promptly subside.

2. It must be distinguished from ulcerative endocarditis. This form of endocarditis is but a part of an acute pyemia, and the heart lesion is secondary rather than responsible for the systemic condition.

In most cases of ulcerative endocarditis there is a distinct primary focus of acute infection. This may be the fallopian tubes, the bones, prostate or skin or some other part of the body.

The organism here is often the staphylococcus or streptococcus pyogenes, or pneumococcus. The duration of the disease is from a few days to a few weeks and is usually fatal. The lesion in the heart is ulcerative rather than vegetative.

3. It must be distinguished from endocarditis which occurs as a terminal event in chronic diseases.

Subacute bacterial endocarditis is a disease having the following features which serve to distinguish it from the other types of endocarditis.

1. The onset is insidious.

---

*Read before the Third Councilor District Meeting, Table Rock, Nebr., Nov. 20, 1924.

2. The general symptoms include gradual loss of strength and tone, a sallow complexion with anemia, moderate loss of weight and low degree or moderate fever.

3. Wide spread arterial emboli take place.

4. Blood cultures are usually or often positive—the organism being streptococcus viridans in at least 90% to 95% of the cases; in a few cases the Pfeiffer bacillus.

5. The course of the disease is slow but progressive, (the streptococcus viridans being an organism of low pathogenicity). Once established, although remissions may recur, it has been almost invariably fatal.

6. The total duration of the illness is from 3 months to 2 years, with an average duration of 6 months.

7. Death occurs from toxemia, heart failure, uremia or cerebral or coronary emboli.

8. The post-mortem findings include a vegetative endocarditis on the valves or wall of a heart, with little or no ulceration. There is wide spread embolic infarction without suppuration. As a result of the embolic process there is often found a form of glomerular nephritis.

Subacute bacterial endocarditis is, we believe, of great importance because of the difficulties which arise in the recognition and in the treatment of the disorder. The onset is very insidious. Most of the cases occur between 15 and 50 years, and half of the cases between 20 and 40 years.

In about half of the cases there is a history of a previous rheumatic infection, but between the occurrence of the rheumatism and the endocardial infection there has usually been a period of good health of several years duration.

In a majority of the cases the endocardium has suffered previous damage. Diseased valve cusps make excellent sites for infection to lodge.

Malaise, slight anemia, some loss of weight, irregular low grade fever, sweats, erratic pains in the limbs, back, joints, fingers or toes, areas of redness or tenderness developing in the hands or feet in any patient in whom a critical examination fails to find other distinct cause should arouse suspicion. Early in the condition the heart signs may be so faint as to escape recognition. If the vegetation is on the wall of the auricle, no murmur may be present.

In some, embolic events may first draw attention to the serious nature of the trouble, such as sudden pain in the left flank, followed by the discovery of an enlarged and tender spleen, pain in the arm with temporary obliteration of the pulse on that side, blood in the urine, or defective vision due to retinal embolism.

Unexplained fever is the most common initial symptom. In many cases it is the cultivation of the organism from the blood of the patient with the suspicious symptoms that make the diagnosis definite and positive.

Turning from symptoms we shall more briefly discuss the important signs.

Multiple arterial embolism. This may occur in the skin causing petechia, of which there may be only one or two about the face or neck or on the hands and feet, or they may be numerous. These small areas are painful. Small emboli occur frequently in the glomeruli of the kidneys, causing infarction which manifests itself by pain, hematuria and albuminuria, or there may be only a few red blood cells in the urine.

This condition, if extensive, may produce the symptoms of a glomerular nephritis and may be the cause of death. These emboli may occur in the retina, brain or arterial walls causing aneurisms.

2. The heart. The heart may present definite signs of endocarditis if the vegetations are on the valves, or little or no signs if the vegetations are on the walls of the auricle. The valves most often affected are the mitral and the aortic. It is largely a left heart affection.

If the blood is bacteria free, but the symptoms and signs definite in a case extending over several months of time at least a tentative diagnosis of subacute bacterial endocarditis should be made.

4. Fever is the symptom together with chilliness and gradually increasing weakness that brings the patient to the physician. The temp. curve is irregular and remittant. Afebrile conditions lasting several days are not infrequent. This type of endocarditis occurs as the result of a blood infection by the streptococcus viridans.

As this organism is the most common bacteria found in the mouth in connection with pyorrhea and diseased teeth and tonsils and is of low toxicity these foci are most probably the primary source in this type of endodeaths.

The metastases do not suppurate and the duration is subacute or chronic. The blood, under normal conditions, is bactericidal to this organism which probably accounts for these cases not being more frequent.

The sequence of events is about as follows: The organisms get into the blood stream and lodge on the aortic or mitral valve; here they form grayish masses which are compound of blood fibrin, red and white cells or blood platlets and some epithelial cells. These organisms multiply in the interior of these vegetation masses and small particles of these masses break off into the blood stream, giving rise to the emboli which occur so frequently in the disease.

There is a persistent and monotonous fever for months and there often comes to be a peculiar muddy green complexion with some clubbing of fingers.

The spleen is usually palpable.

The emboli lodge in the glomeruli of the kidney producing infarction and glomerular nephritis.

Now, as to the prognosis. This has been extremely bad.

Osler in 1909 reported 10 cases with 10 deaths.

Lenhartz 1904 reported 16 cases with 16 deaths.

Bellings 1909 reported 14 cases with 13 deaths (1 recovery).

Harder 1920 reported 150 cases with 149 deaths (1 recovery).

Libman 1912-20 reported 150 cases with 146 deaths (4 recoveries).

The treatment used in these cases was largely symptomatic. In some autogenous vaccines were used without apparent effect.

Because of the gloomy outlook for these patients, we were much interested in a report of 8 cases by Dr. Joseph A. Capps of Chicago, in which he used sodium cacydolate in grs. 1 to 4 by hypodermic or intravenous injection kept up over a period of months.

Of the 8 cases 4 were alive and apparently well after 2 years time. 2 more cases were living but the treatment had not been of sufficient duration to determine final results. This report was published in the American Journal of Medical Sciences for January 1923. I recently wrote Dr. Capps for a report of his cases to date and last week received this reply.

"We are still using the cacodylate and feel quite encouraged. Of 35 cases, fifteen are dead, seven are in the first year of treatmen, seven are in the second year, 2 in the third year, and 4 have gone over 3 years and are apparently well. Of course, in this group others will probably die, but I think a good many of these cases will go on to a permanent recovery."

The experiments of Allison upon the effects of arsenic in the form of a watery solution of salvarsan, dearsenal and arsenobenzol on streptococcus have an important bearing on the rationale of this treatment. These preparations, he asserts, have a distinct bactericidal action against streptococci in the blood stream of experimental animals.

They produce no untoward effects on animals where large doses were given and frequently repeated.

"They possess hopeful possibilities for the treatment of streptococcus infections." (Allison).

Dr. Capps thinks that in the ordinary dosage the action is inhibiting rather than bactericidal and that it should, therefore, be given over a long period of time, in order to bring about the death of the organism. He has used sodium cacodylate because of its apparent safety.

While in army service in France, we saw two cases of subacute bacterial endocarditis with the streptococcus viridans in blood culture. These cases both died after a lingering illness.

Over two years ago we saw a case of this infection in a girl of 12 years, the prognosis of which seemed hopeless. We suggested the sodium cocadylate treatment which the physician in charge very faithfully carried out. The patient has been apparently well for some time.

Dr. Capps' results are so much better than those reported for any other treatment that we are given hope in dealing with this hereto-fore fatal disease.

Thanks, largely, to the two Class A medical schools in Omaha, the profession of this state has made immense strides forward during very recent years.

THE BOOMERANG

When a bit of sunshine hits ye,
After passing of a cloud
When a fit of laughter gits ye
And yer spine is feelin' proud,
Don't forget to up and fling it
At a soul that's feelin' blue,
For the minute that ye sling it,
It's a boomerang to you.

—Captain John Crawford.

OBSTETRICAL PROCEDURES

J. R. Taylor, M. D., Sidney, Nebr.

The practice of obstetrics is common, not being limited to the doctors of medicine, but commonly undertaken by the osteopath, the chiropractor and in some instances by the old grandmammies. Fortunately for the mothers, nature takes care of a great many disasters and fortunately for the obstetrician, women to a great extent, accept the chronic illness following childbirth as a matter of course.

I am going to talk to you today of some of my procedures and observations in everyday obstetrics. First, let me mention briefly a few important facts concerning the conduct of labor. We all have read in our text books how this and that should be done, but perhaps amidst the rush of this busy life we have failed to open a text book on obstetrics since we crammed so for the state board examination some years ago. If such is the case, allow me to refresh your store of knowledge along a few important lines.

In my practice of obstetrics there are three goals toward which I work. The first and most important is the safety of the mother; the second is the safety of the child, and the third is to spare the mother as much suffering as I can.

In discussing my first goal, that of the safety of the mother my first point is thorough asepsis. We all have ideas as to what that means but perhaps some of us may be more or less negligent as to the importance of it. Whenever the birth of the child has taken place before my arrival I never have any fear of infection. Why? Because the purturient tract has had no contamination from an outside source. Would it be too high an estimate to say that ninety-five per cent of all fatalities in mothers are due to infection? As soon as I am called to a confinement I give the mother a large enema thus cleansing thoroughly the lower bowel and preventing any contaminations from evacuations during the second stage of labor. Next I shave the pubis and thoroughly cleanse the parts with plenty of soap and water. After this preparation I am ready to examine the patient and watch the progress of labor.

Rectal examinations are coming more and more into vogue and rightfully so, too, for the doctor may make as many examinations as he pleases with no fear of infecting the purturient tract and with little discomfort to the patient. However, I make it a practice to make a vaginal examination first to determine if the patient is really in labor and, if possible, the position of the head. I watch the further progress of labor by means of the rectum and if I was unable to determine the position of the head with my first examination, when the head is out of the uterus, I make a second vaginal examination. I have a freshly boiled glove for each of these examinations.

It requires quite a bit of practice to ascertain the exact dilitation and progress of labor by the rectum and at first we are apt to make big mistakes but after many examinations our gloved finger will accustom itself to the amount of dilitation of the cervix, and the position.

As soon as I have determined that the patient is really in labor I give her a half strength tablet of H. M. C. This carries her along nicely into the second stage of labor, giving her rest between pains and avoiding many discomforts during the labor. When the head is well down I start giving some chloroform and at the same time one to two minim doses of pituitrin at fifteen or twenty minute intervals, if pains are not up to normal or are retarded by chloroform. I do not carry the chloroform beyond the analgesic stage except occasionally at the very last of the second stage. I find that the tiny doses of pituitrin keep the contractions up to normal in spite of the relaxing effect of the chloroform. To give more than two minims is a crime and should never be practiced except when especially indicated. There seems to be wisdom in working small doses of pituitrin and chloroform together in normal labor. If at any time the pituitrin should cause a tonic contraction I have patient far enough under chloroform so that by pushing it for a second or two I can cause complete relaxation quickly. I have noticed that a patient who has a uterus under the influence of pituitrin at the end of the third stage is less likely to suffer from after-pains.

In regard to tears I hate to get one and quite a few can be avoided by some manipulation of the perineum and retarding the expulsion of the head. As the head works its way through the vulva I put the patient a little deeper under chloroform and restrain her from bearing down too forcibly with her pains. As the perineum bulges more, with a piece of sterile gauze I make traction with my thumb and two forefingers toward the center, gently pressing the head up towards the pubis. If the head has a tendency to recede several times I let it do so, then, finally, I hold the perineum and make pressure over the uterus, thus gradually stretching the perineum to permit the passage of the head. As soon as the head is through I try to work the posterior shoulder out first while the anterior shoulder is pulled up under the pubis. If the anterior shoulder, as in some cases, tends to present or emerge first, lower the head enough (keeping the perineum in mind) to pull the anterior arm out, then extend or elevate the head and shoulder over the pubis and deliver the posterior shoulder last. A great many tears are caused by both shoulders coming through at the same time.

If I do get a tear I repair it as soon as the placenta is delivered, never allowing anything to touch the raw surfaces except a sterile piece of gauze which I use to swab out the wound from inside the vagina outwards when there is any bleeding so that I may accurately coaptate the two fresh surfaces. The needle, threaded with silkworm gut, is carried completely around the bottom of the tear, emerging at a corresponding point on opposite side. Sutures are just tight enough to hold the surfaces together. In the after care I instruct the nurse to use no so-called antiseptic solutions on sutures, just sponging around the sutures. In other words I leave them absolutely alone.

I want to mention the use of forceps. I do not believe they are used nearly as frequently as they were years ago, and I believe most of us will agree that it is far better, both from poor results and professional standpoint, to be more patient and to give a little more time to the confinement in the first stage of labor. If the head has been out of the cervix forty-five minutes and if small doses of pituitrin have failed to bring any progress, then I think it is time to apply low forceps. The proper application of forceps is most important. Be sure the blades are directly over the ears and never grasp the forceps at the end of the handles thus causing undue pressure on the head of the child. I always wait for a contraction before applying any traction, and I pull gently at first, releasing blades between the first two or three pains and sliding them in and out a little to avoid pinching and bruising the cervix and tissues. In regard to high forceps I cannot recall many instances when I think they were necessary. If the patient has been suffering a number of hours, give her a light hypodermic and let her rest and at the same time a carthartic, if necessary. In due time the contractions will start in earnest and the head make its way through the cervix. But, always have in mind a contracted pelvis in order to take advantage of an earlier and safer cesarean operation.

Eclampsia is one of the complications of pregnancy that we dread the most, and it requires quick action, strenuous treatment and a keen judgment. When the pregnant woman makes her first visit to my office I give her a thorough physical examination including teeth, tonsils, urine and blood pressure. I advise her to return once a month during the first six months of her pregnancy and twice during her last three. I warn her against headache, edema, blurred vision, dizziness, insomnia, drowsiness and demand that she notify me immediately should any abnormal symptoms arise. At each visit I take her blood pressure and examine her urine. With these precautionary examinations I feel that I have stayed clear of eclampsia in a number of cases.

But sometimes with scarcely any warning the urine will become loaded with albumin, the blood pressure will go up, the patient will become comatose, but on inquiry, this condition has followed quickly some primary infection. In all of my observations of these eclamptic patients I have observed a feeble effort on the part of nature to empty the uterus of its contents occuring at any period of the pregnancy. But due to the profound toxemia there is no progress made in the contractions of the uterus. We can plainly see that if the toxemia is reduced these contractions will grow stronger and the patient will go into labor of her own accord with nothing more than a small loose gauze packing against the cervix.

The method I have of reducing the toxemia, the quickest and one which undoubtedly saves many a patient's life is that of bleeding. With a sphygmomonometer on one arm I split one of the large veins in the other arm and bleed the patient to the extent of one to two pints according to weight and according to the drop in the sphygomomonometer and the quickening of the pulse. When the sphygmomanometer reads between one hundred forty to a hundred and fifty mm. I stop. At the same time I start eliminative treatment. If the patient is unconscious, I use a stomach tube and through it give two ounces of salts dissolved in hot water, three or four grains of calomel, and three or four c. c., pills, powdered and dissolved in water. Then I am ready for a quart of either five per cent sodium bicarbonate solution or saline under the skin or intravenously. Hot packs to produce sweating are also of value.

The causes of eclampsia have always been more or less obscure but the more cases I see, the more I am convinced that in years to come we will look to the focal and all primary acute and subacute infections coupled with a peculiar lowered resistance of the pregnant woman as a starting point of eclampsia. I look upon the liver and kidneys as a receptive organ for toxic products, and these organs doing double duty in the pregnant woman are the first to break under the strain. Thus bad teeth, tonsils, gall bladder, appendix, in short all acute and chronic infections are exciting causes to eclampsia in my opinion.

Should the woman who once had eclampsia become pregnant again? In my opinion, yes, if enough time has elapsed between the pregnancies for the inflammatory condition of the kidney to have entirely healed. I look upon eclampsia as only a transitory albuminiuria caused by the irritation of toxic products.

HEAD PAINS OF LOCAL ORIGIN*.

B. A. Smith, M. D., Auburn, Nebr.

Despite the passage of the Volstead Act the medical profession is still confronted by the symptom known as headache. In our daily work I have been impressed by the extreme frequency with which it occurs. The symptom, headache, may in some instances be so marked as to obscure the less evident underlying causes, and prompt the patient and physician as well to mistake the headache for the disease itself.

Inasmuch as the causes of headaches in general are so many and varied I shall endeavor as far as possible to limit the scope of this paper to the causes of headache arising in the head itself, these being the ones with which I am most commonly concerned in my line of work.

When a patient presents himself with headache as one of the most prominent symptoms it is well to endeavor to bring out all possible points respecting it: That is, regarding the method and time of onset, the severity, the duration, whether recently acquired or a chronic affair, whether it dates from some accident or illness, whether or not it is periodical, does it follow a period of close application of the eyes, whether relieved or aggravated by exercise in the open, also just what portion of the head is painful. By following this method one is frequently able to pick up a clue or clues which will go a long way toward solving our problem.

It would little behoove me to attempt to give percentages as to the causation of headache, but this much I can truthfully say: That a large majority of the headaches with which I came in contact, are of ocular origin and of these the most common location of the distress is in the supraorbital and frontal region, usually following the use of the eyes for near work; usually but not always the headache disappears after a night's rest (but it is a common occurrence to find an eyestrain severe enough to have a left-over the morning after, especially if we indulge in the movies or late study). This type of headache is more commonly associated with far-sighted astigmatism, either simple or compound; with this latter condition it is also very common to find the headache temporal or occipital in location. And right here I want to say that there has been a senseless waste of ichthyol and thousands of yards of perfectly good gauze in vaginal tampon form for the relief of a so-called reflex occipital headache which was really due to eyestrain in some form.

Another striking thing is the frequency with which the most persistent headaches are associated with a comparatively small error of refraction, but very commonly these same cases, if carefully examined, will show a noticeable muscle imbalance.

Eye diseases, more especially iritis of a low grade, irido-cyclitis, incipient glaucoma, etc., should be also ever kept in mind in tracing down some of the more obstinate forms of headache.

In acute infections of the antrum of Highmore there is a sense of fullness over the cheek, intensified by leaning forward and downward. This is sometimes accompanied by a pain radiating to that side of the head and down the neck, while the supra-orbital nerve may be sensitive due to a sympathetic reflex. In chronic infections this sense of fullness is seldom noticed when leaning forward, but the evidence of a focal infection is usually present in some shape or form.

---

*Read at Table Rock 3rd Councillor District Meeting, Nov. 20, 1924.

In frontal sinus infection there is usually a definite pain over the affected sinus which radiates back over the affected side of the head, and a marked sense of fullness is felt if the head is lowered forward; dizziness and dread of light are often concommitant symptoms. If suppuration is present the pain usually comes on soon after rising and at about the same time each day, increasing in severity until about midday and often subsides completely by five o'clock p. m. If congestive in nature, that is, if it is produced by pressure of the middle turbinates against the lateral wall, with a resulting lack of ventilation and drainage, the pain is more apt to be continuous. Pratt explains the relief obtained at night from the suppurative type by the supine position — resulting in a decreased congestion of the nasal mucosa— lowered blood pressure — slowed heart action — decreased secretion, etc. — but I feel that this explanation is open to question in that relief comes at mid-afternoon while the patient is still up and few of his reasons will apply. It would seem to me from what I have observed that the relief was obtained from a gradual drainage of secretions from the sinus and a decrease in pressure resulting in natural relief from pain, which is common in drainage of the sinus or any other area of confined pus. To prove my point I would ask that you take the attack when it is at its height — shrink the area comprising the middle meatus thoroughly (by the cocain spray) — apply negative pressure and if you are successful in withdrawing some of the secretions from the sinus, you will obtain almost immediately the same type of relief that occurs naturally several hours later when nature is left to her own resources.

In infection of the anterior ethmoid area, a sense of fullness and pain is produced between the eyes and across the bridge of the nose, while in posterior ethmoid inflammation there is pain not only between the eyes but also a sense of pressure as though the eyes were being pushed forward and outward.

In suppurative sphenoiditis there is a sense of fullness in the center of the head—deep—sometimes very severe and usually pains radiating to the top and occipital part of the head and over the ear; this is frequently accompanied by dizziness and a sense of suffocation.

I can not believe that the tonsils are responsible for as much headache as they are charged with. I have, however, had a number of cases in which they were responsible for an existing myositis affecting the occipito-frontalis muscle and its aponeurosis and which disappeared promptly following their removal.

With regard to ear infections, a true suppurative middle ear infection seldom produces headache. If, however, the suppuration extends beyond the confines of the middle ear, headache is a very common symptom and one to be on your guard for, as such complications as mastoiditis, abscess of the inner ear, extra-dural abscess, brain abscess, perisinus abscess, thrombosis of the lateral sinus and meningitis are highly possible. Thus, in any case of middle ear infection accompanied by persistent headache an exhaustive otological and x-ray examination should be made to determine if any of the above complications exist.

Dr. Sluder, in his book "Headaches and Eye Disorders of Nasal Origin" has contributed some wonderful aids in some of the more obscure types of headache which we occasionally meet. He lays particular stress on the closure of the frontal sinus without suppuration producing what he has aptly named "vacuum frontal headache." In this condition there is a marked tenderness of the floor of the sinus or Ewing's point, a more or less constant pain in the sinus due to negative pressure produced by rarefaction of the air following closure of the infundibulum or hiatus semilunaris. In these cases no suppurative process is demonstrable at any time. They are negative to transillumination and to x-ray examination and need a very careful study to eliminate all other possible etiological factors.

Migraine, due to our lack of knowledge of it, belongs in a classification of its own. The prevailing theory is that the attacks are produced by the periodical explosion of nerve forces originating in the cerebral cortex or in the sensory centers involving principally the intracranial roots of the trigeminus nerves. I have seen some cases ameliorated by correcting refractive errors. Also I have stopped the attack by anesthetizing the sphenopalatine ganglion and there are stranger things than that some day we may find the syndrome to be due to hyperplastic conditions in the nose.

Some of the most baffling cases of headache, with which I have come in contact, have been due to impacted and infected teeth. They may occur in almost any portion of the head and in some of the cases the pain has been severe enough to incapacitate the patient. One case which was extremely severe, so much so that the patient was reaching a psychopathic state was especially baffling due to the fact that thirty-five years previous all evident teeth had been removed. An x-ray of the mouth was finally taken and an unerupted third molar was found which, when removed, resulted in relief, not only from the pain, but from the nervous symptoms as well. There are many cases of this type that might be cited but this is enough if it will help us to remember that headaches of almost any type may arise from dental origin.

Pituitary headaches are described as peculiar, recurring, bitemporal, very intense, boring type of headache, evidently due to a pituitary deficiency. We are helped in their diagnosis by the fact that they are usually accompanied by other conditions suggestive of pituitary disturbance.

In certain types of vague headache, one must ever keep in mind the persistent headache which sometimes accompanies cerebral syphillis, the periodic headache of malaria, those due to Graves' disease, low grades of meningitis and many others with which we occasionally come in contact.

In closing, let us ever keep in mind that a headache is always a symptom and never a disease; that in some cases the most painstaking effort must be used in obtaining the underlying cause. In no branch of our work is there need for a more complete armamentarium for tracing these causes and in which all of the modern aids to diagnosis will be of more assistance in giving us an intelligent view from all angles.

THE ETIOLOGY AND PREVENTION OF DIPHTHERIA*

John D. Reid, B. Sc., M. D., Pilger, Nebr.

The only excuse to offer in bringing this subject before you tonight, if one were needed, is the renewed wide-spread interest in it. There is no disease of which I could speak of greater consequence to the childhood of the world.

Diphtheria has emerged from the dark and mysterious unknown to the broad light of day. Its etiology, detection, control and cure are all well known. We have the technic of the procedure, there remains only the application; but that is the problem that gives us pause.

To make full use of the knowledge of this scourge in the hands of modern medicine a wide, thorough, painstaking campaign of education must be carried on. The information must be put before the people, the majority of whom are sane and reasonable and would be glad to further a movement that could be shown to be harmless and at the same time effective in preventing disease.

I believe it would be ethical and proper for boards of health and also physicians to carry on a propaganda of education concerning the detection, susceptibility, immunization and treatment of this malady before woman's clubs, parent-teachers' meetings, schools, churches and the press if need be—anyway to get the news across to those who are vitally interested.

It is said the incidence of diphtheria is almost as great as it ever was and the death rate above what it should be in the light of the knowledge at hand. It is estimated there are 200,000 cases with 15,000 deaths annually in the United States, to say nothing of the many post-diphtheritic paralytics. The registration area of the U. S. showed a general mortality rate of 21.4 in 1910 while in 1921 it was 17.7 showing a slight decline. The rate varies from 5 per 100,000 in Norfolk, Va., to 28.1 in Fall River, Mass.

As to the specific causative organism of diphtheria little need be said. The Klebs-Loeffler bacillus has been indicted and convicted as being the guilty party in this crime against childhood. Unfortunately the date of its execution has not been fixed. There are two great friends of this enemy abroad in the land—one the lack of knowledge of susceptibility and control, the other just pure superstition. I have heard mothers say "why a child never has any health after having poison injected into its arm, I wouldn't think of letting my children be tested." A supposedly intelligent man said, if testing and immunization were compulsory he would keep his children out of school. This is a sample of what scientific medicine must overcome by benevolent teaching before the Klebs-Loeffler gets its dues.

---

*Read before the Madison County Medical Society, Norfolk, Nebr., January 20th, 1925.

Diphtheria as a clinical entity has been known and described since the 2nd century when Arteus wrote of it as being a disease forming a thick moist membrane on the tonsils of children. Bretonneau, a Frenchman, in 1826 ascribed to the disease contagious qualities and called it "Le Diphtherite" from the Greek, meaning membrane or skin.

The germ was first isolated by Dr. Klebs of Zurich in 1883. In 1884 Dr. Loeffler confirmed the work of Klebs and was able to satisfy the postulates of Koch that a germ must be found in the involved part, must be isolated, reinoculated and again recovered. Hence the Klebs-Loffler bacillus.

In 1890 Von Behring and Frankel began work on immunization which resulted in 1894 in the discovery of anti-toxin with the accompaning reduction of mortality. The next step in the conquest came in the year 1913 when Dr. Bela Schick of Vienna commenced work on skin tests which eventuated in the Schick test as we now have it.

It is concerning this test I want to lay special emphasis this evening. The test is simple, easy of administration, cheap and effective in ferreting out the susceptible ones. The test consists of the intradermal injection of .1 cc of diluted diphtheria toxin so that the amount equals 1-50 of the minimum lethal dose for a guinea pig of 250 grams.

The injection is made on the forearm with a short sharp pointed needle of 24-26 gauge. It is slipped just under the skin, the eye to the surface and visible. The plunger is then pressed gently until the required amount .1 cc is given. A small vesicle raises up which in a short time disappears. After making a few Schick's one need not regard the reading, as the bleb is a sufficient guide. The reaction is characterized by a reddened area from 1-3 cm across. This is surrounded by an infiltrated zone of varying size. The reaction makes its appearance in from 24 to 48 hours, reaching its height in about 3 days; after which it fades out leaving a scaly spot which persists for several weeks. It is believed this immunity is permanent but it has not been tried long enough to definitely so assert.

There is very little constitutional reaction as a rule, a slight tenderness accompanied by some congestion. In making tests patients who have an asthmatic history should be avoided because of the danger of anaphylactic shock as is possible in the use of any horse serum. The concentration of antibodies in the serum as it is now prepared and the precipitation of globulin renders the solution almost free of the proteins which were the cause of the shock.

The test may be positive, negative or psuedo. The per cent of positive reactions depends to a large extent on the age of the individual. The nursing babe, to a degree, is immune up to the 9th month; after this the takes increase up to the second year.

Park gives the following table: 1-2 years, 70%; 2-3 years, 60%; 3-5 years, 40%; 5-10 years, 35%; 10-20 years, 10%. This gives us an average of 50% from one to ten years.

Inasmuch as so many children from 9 months to 3 years react it is recommended that they be not Schicked but immunized directly. All from 3-15 should be tested and the postives protected by 3 doses of toxin-antitoxin given at weekly intervals. Immunization works slowly requiring from 6-12 months to insure protection. 95% are then negative. Toxin-antitoxin is not to be used for immunizing in case of exposure; here the anti-toxin is the remedy as it affords immediate safety although but for a few weeks.

The negative result shows nothing but the site of the needle puncture and indicates a sufficient supply of anti-bodies to neutralize the toxin of the diphtheria bacillus.

There may be a pseudo reaction that is not so easily distinguished from the real; there is this differential point, however, it appears in a few hours, lasts but a few days, and fades without scaling. It is a protein reaction from the toxin. A control is used in the opposite arm which consists of toxin heated to 75 degrees to destroy the active principle and injected in the same quantity and same manner as the active one.

Interpertation of tests: A positive means that the reactor has no anti-toxin in the system to protect the dermal cells from the irritating action of the injection; hence the inflammatory response. Such an individual is susceptible and in proper conditions of exposure would be very likely to contract the disease.

A negative test on the other hand means a natural defiance against the toxin of the diphtheria germ. The question arises—can one giving a negative response get the disease? Park and Zingher say "No." In the scarlet fever wards of the Willard hospital in New York all patients entering were tested. Those who were negative were carefully watched and although 20% of them became carriers not one developed diphtheria showing the accuracy of the test on a series of several thousand cases.

After hearing Dr. Zingher on this subject last summer I became interested and at the opening of the school offered the test free to any who wanted it.

Considerable discussion and some excitment resulted and 52 tests were made, 28 positive and 24 negative, 12 immunizations were given. Thus a start in diphtheria prophylactics has been made.

TWO CASES OF OBSCURE ANEMIA

W. D. Lear, M. D., and M. E. Lathrop, M. D.
(Internes, University Hospital, Omaha, Nebraska.)

During the past four months at the University Hospital there have been ten cases of profound anemia, both primary and secondary, admitted to the medical service of Dr. E. L. Bridges. The following two cases presented unusual findings and are thought worthy of record. The first was in charge of Dr. Geo. P. Pratt and the second Dr. Rodney W. Bliss.

APLASTIC ANEMIA

B. W., No. 14823, age 19, entered the University hospital the 11th of October, 1924, complaining of extreme weakness and faintness and nosebleed. Patient had been kicked on the nose in football practice a month previously. Since that time his nose had bled some every day but the patient did not think it serious and continued to go to school. About a week before entering the hospital he became so weak he stopped school. Three days ago the bleeding became worse. On entering the hospital he was too weak to walk and was brought to the ward on a stretcher. His nose was bleeding at the time he entered—a sero-bloody discharge.

Past History: During childhood he had frequent tonsillitis and mumps. He had always been healthy and gave no history of bleeding previous to his injury though questioned closely on that point. His history by systems was entirely negative. There was no history of bleeding in the family.

Physical Examination: Patient is a well-developed young man, very pale, lying in bed with a sero-bloody discharge from his nose. He is very weak.

Head and neck: Eyes—React to light and accommodation.

Ears—Negative.

Nose and throat: Examination failed to locate any bleeding point, the blood coming from high in the nose. The mucus membranes showed profound anemia.

Chest—There were no rales in the chest. The heart rate was 100, with a systolic murmur, blood pressure-systolic 115, diastolic 65. The abdomen was negative except for flat note above pubis on percussion due to distended bladder.

Extremities—Negative, reflexes normal, no edema.

Laboratory: Blood—Hemoglobin, 20%; red cells, 1,000,000; leucocytes, 2,300; polymorphonuclears, 60%; mononeclears, 40%; platelets, 30,500; no poikilocytes nor anisocytes. Bleeding time 1 hour, coagulation time 4 minutes.

Culture from nose—Predominant microorganism staphylococcus aureus, also a few organisms morphologically typical of diphtheria bacillus but found avirulent by guinea pig inoculation.

Urine—Specific gravity, 1012; acid, no sugar, albumin, pus, blood or casts.

Wassermann—Negative.

Spinal fluid—Clear, cell count of 5, no blood. Fluid came away under some pressure.

X-ray of skull, no fracture.

Progress: On entering hospital a nasal pack was used. This was kept in for 12 hours and then removed. Patient went through the next day with no hemorrhage but started to bleed that evening, October 12, about 5 p. m. Bleeding continued through the night. Patient was transfused the next morning, October 13. Following transfusion condition improved. Patient started bleeding again on the afternoon of October 16. He had been running a slight temperature since the transfusion. Nasal pack again used. Temperature went to 104° F, during the night. Pack removed in 12 hours. Very offensive odor from nose and throat, patient irrational and so weak he required catheterization.

October 20 transfused again and seemed better but became weaker and irrational again the next day.

October 22 patient became worse again, respirations very rapid and labored, lungs filled up with fluid and patient died shortly after midnight.

Necropsy Findings. There was no fracture of the skull or nasal bones, no intracranial hemorrhage. The general examination was entirely negative except for an entire absence of hyperplasia of the bone marrow.

Remarks: This case on entrance appeared to be a simple epistaxis from trauma, but continued uncontrollable bleeding led to the observation that he had a distinct blood disturbance, evidenced chiefly by the leucopenia, low blood platelet count, absence of erythroblasts, and the prolonged bleeding time. There were no purpuric hemorrhages and the evident aplasia of all blood forming organs would favor the diagnosis of an aplastic anemia. The origin of such a condition is obscure.

ACUTE HEMOLYTIC ANEMIA

Mrs. G., No. 15351, white, married, age 23, a stenographer, entered the University hospital December 20, 1924, complaining of shortness of breath, swelling of feet, weakness and pallor. She stated definitely that she had always been well and robust until the early part of last summer when she began to feel weak and fatigued. She was not the least concerned however, and attributed her languor to hard work and the hot weather. In August, she was cautioned by her mother to take a rest and was told that she seemed pale. In September, she states that she began to notice that she tired easily while walking, especially up hills, and about this time stopped dancing on account of fatigue. In the last week of September, she was married, although she was feeling so badly that she questioned the advisability of this ceremony. In about two weeks her feeling of fatigue had so progressed that she saw a physician who told her that she had heart disease and prescribed medication. She felt some better. About this time she began to notice that her feet and ankles would swell every evening after work, and in a week or more remained swollen during the day. At this time her pallor became so marked that all of her acquaintances spoke of it. She finally went to bed, gradually grew worse and entered the University hospital December 20, 1924.

Past history was entirely negative. She was always a strong robust girl. When a child she had measles, mumps and pertussis, but each was a very light attack. She has never had rheumatism nor any illness or complaint similar to that she has now. Her menses began at 13, regular every 28 days, flowing a normal amount for 3 days. Her last period 3 weeks ago was very scanty and lasted only 2 days. There was nothing in her family history which would appear to throw any light on her present condition. Her father and mother are both living and well. The patient is the eldest of nine children, all living and well except one brother, 6 years old, who has a rheumatic heart disease.

Habits and weight: Patient has always been strong, cheerful and ambitious. She left home five years ago after finishing high school. While in Omaha she worked her way through a business college and after finishing worked as a stenographer, and at the same time did maid work at a home for her board and room. Her usual weight was 135. She now weighs 116. Most of her loss has occurred during the past three weeks.

Physical Examination revealed a young, fairly well nourished woman lying in bed, breathing easily but about 30 respirations per minute and seemingly very anxious. Her skin was damp and warm and strikingly pale, with an icteric tinge. Sclera pearly white, conjunctiva clear. Lips white, mucous membranes of mouth and throat pale, tongue smooth and clean. Throat not injected, teeth in excellent condition. No enlargement of cervical and axillary lymphatics was demonstrable. Lungs were resonant throughout, no rales. Heart—apex was in the 5th interspace, 1 cm. outside mid-clavicular line. Percussion dullness was demonstrable 1 cm. to the right of the sternum. Beat regular, rate 120. A loud systolic murmur replaced the first sound over the apex and was transmitted upward towards the base. At Erb's point a faint presystolic blow could be heard, and at times seemed to blend into the first sound and be immediately followed by the systolic blow. Abdomen negative except for the presence of a palpable lower border of the liver 2 fingers below the costal margin, and the spleen felt as an indefinite mass just under the costal margin. There was some edema of the feet and ankles. Temperature 101-104. Pulse 120. Respiration 30.

Laboratory Findings: Urine—Sp. Gr. 1018-1022, reaction acid, albumin, sugar, diacetic acid and acetone negative.

Blood—Red blood cells 980,000, leucocytes 31,500, polymorphonuclears 35.8%, large lymphocytes 42.3%, small lymphocytes 11.5%, neucleated red blood cells 8.8%, transitionals 1.6%. No increased fragility of white cells demonstrable on slide. Bleeding time 1 hour. Blood cultures taken 12-12, 12-16 and 1-8 all negative.

Feces—8 examinations showed no blood. Stomach analysis—not made due to weak condition of patient.

Progress Notes: 12-12—Patient insists that she feels very well. Has no pain or discomfort.

12-14—Skin seems to be more icteric. A small abscess has developed in left gluteal fold, which was opened with a scalpel, and some thick white pus obtained. Wound bled profusely for several hours. Culture of pus shows a pure growth of staphylococcus aureus.

12-15—Very dyspneic, red blood cells 860,000, leucocytes 50,000, blood platelets 43,000. A transfusion was done, 600 cc. blood by citrate method.

12-16—Patient much better. Has developed a cough; a definite area of consolidation can be made out at base of right lung. Some rales in left base.

12-22—Temperature 104-105. Coughs most of the time; sweats profusely. Insists that she feels well.

12-24—Red blood cells, 1,012,500, leucocytes 21,700, Polymorphoneuclears 50%, large lymphocytes 29%, small lymphocytes 19%, neucleated red blood cells 2%. Another transfusion was given, 500 cc. of citrated blood.

12-25—Patient has developed a number of small abscesses around gluteal folds and on back. They are peculiar in that there is no redness nor induration, merely a nodular enlargement, which contained varying quantities of thick creamy pus. Cultures show staphylococcus aureus.

12-31—Chest findings about the same.

1-6—Blood count, red blood cells 1,025,000, leucocytes 26,500, volume index 1.15.

1-7—Patient rapidly growing weaker, a friction rub can be heard over anterior part of right chest. Left chest has an area near base over which rales can be heard.

1-10—Patient rapidly grew weaker and died. Necropsy permit could not be obtained.

Remarks: This case presents a problem for diagnosis. The clinical course and blood findings were those of an acute hemolytic anemia. The temperature and leucocytosis suggest an infectious origin, although the low per cent of polymorphonuclear leucocytes, the negative blood cultures and the high per cent of lymphocytes would favor a hemolytic toxin being liberated from some localized focus of infection. The only local signs were in the heart, but this did not seem to be progressive. The presence of a large number of nucleated red blood cells indicated a very active erythroblastic bone marrow. The prolonged bleeding time was due to the low blood platelet count. Other diagnoses to be considered are an acute pernicious anemia, an acute leukemia or an anemia allied to the purpura hemorrhagica group. It is a distinct loss that a necropsy was not permitted, as pathological findings might have cleared up the diagnosis.

OCHSNER'S NON-OPERATIVE TREATMENT OF GOITER AGAIN — A REJOINDER BY DR. OCHSNER

Editor Nebraska State Medical Journal:

Some time ago someone sent me a marked copy of the December number of your journal. The article marked was that by Dr. Clement L. Martin entitled, "Some Fallacies of the Intraglandular Injection Treatment of Goitre." I have never so far permitted myself to enter into either a newspaper or a journal controversy because, as a rule, not much good comes of it; but the article above referred to contains such a large number of dogmatic, unsupported and unproven statements, some of which are so clearly contrary to fact that I cannot let it go unchallenged.

To quote from the above mentioned article—"The limited value of any form of intraglandular injection therapy is well known; to those whose experience in this field is large, denying the permanent value of such treatment would have the aspect of proving an axiom or needlessly wasting words." It would be interesting to have the author of the above statement cite his authorities. The chances are he would give the names of a few men who have perfunctorily tried the injection method in a few cases or never tried it at all, the latter basing their opinions on theoretical grounds entirely. The only evidence he does produce of any man who used five per cent aqueous solution of phenol is Haven, who reports 150 cases most of whom were cured. The other citations deal with the injection of phenol in glycerine or other substances than phenol. It is plainly unscientific to condemn the use of five per cent aqueous solution of phenol because a glycerine solution of the same drug caused gangrene or because arsenic, ergot, iodine, iodoform, iodoform and ether, bichloride of mercury, potassium permanganate, ferric chloride and other remedies proved unsatisfactory.

Martin in his article says "The fallacies of the intraglandular injection treatment are: (1) It is not curative. (2) It is dangerous. No injection treatment of this kind can be considered a cure for exophthalmic goitre or hyperfunctioning adenoma (toxic adenoma). It is necessary to resect all but a twelfth to a sixth of the gland in a severe case of exophthalmic goitre to cure the patient, this amount of the gland cannot be safely destroyed by intraglandular injections."

The very day that this article came to my attention twelve goitre patients were in my office either for treatment or observation. Among the number was one who had come to me first on April 2, 1924, with exophthalmic goitre of a degree such as I have rarely seen and I have seen some bad cases. Her heart beat was over 180 a minute, most of the time so rapid and fluttering that it could not be counted at all—only about half of the beats perceptible at the wrist—weight 82½ pounds, delirious, vomiting and diarrhoea. Not one of my associates thought she could recover under any form of treatment. She was kept in bed for a month at absolute rest with phenol injections every five days and was able to leave the hospital on the first day of May. After leaving the hospital, she came to the office once a week for the injections and on the fifth day of August, 1924, I note from the records, the following notations were made—she feels fine, her heart perfectly regular, heart tones clear, 108 per minute; pulse regular and strong, 108 per minute; weight 95½ pounds. By the 11th day of November her weight had increased to 113¼ pounds, and by the third day of February 1925, 119 pounds; and so far as the patient knows she is now perfectly well.

A patient was referred to me by a competent internist on August 16, 1924, with a diagnosis of severe toxic goitre. She was placed in the hospital for seventeen days during which time she received three phenol injections. On January 20, 1925, she reported for observation and when asked how she felt, without any prompting or leading questions, she replied: "I could not feel better; have not felt so well in two years." She had had only eleven injections, three at intervals of five days, three at intervals of one week, two at intervals of two weeks and three at intervals of three weeks. On the above date there was no evidence of enlarged thyroid or any other evidence of thyroid disease. Except the first fifteen days when she was in bed at the hospital, she has been up and around and has been looking after her household duties. I wonder whether either of these patients would have made such a rapid recovery if they had been thyroidectomized. Let us not forget that when a patient has been thyroidectomized such a patient is far from being well. A very considerable per cent never again regain full endurance and efficiency while by the above method I am convinced a much larger per cent actually get entirely well. In addition a large number of patients suffering from thyroid trouble to a minor degree can be entirely cured without the necessity of an operation. Only the other day I stopped a nurse in the hospital who had been below par for several years; she had just completed a course of five injections at intervals of a week, losing no time off duty during the treatment and had gained seven pounds and jocularly reported when I asked her how she felt: "I feel like a 'million dollars'," and she certainly looked it.

To put it mildly, comparing phenol injections in goitre to corrosive paste in cancer seems to me rather far fetched and going far afield. It brings to mind just one more history. Some months ago a young woman came to me with glandular enlargement of the middle lobe of the thyroid. In taking the history the fact was brought out that she had recently consulted two prominent thyroidectomists both of whom had advised operation. I injected her five times at weekly intervals when all of her signs and symptoms had subsided. It does not take a very vivid imagination to figure out what she thought of the surgeons who wanted to operate. I will quote here what she did say to me when I discharged her as cured. She said: "I wonder whether the two surgeons who advised operation thought I needed the operation or whether they needed the money?" The practice of substituting major operations with considerable danger, increased morbidity and some risk of scar formation for more simple procedures with less danger, much less loss of time and no risk of scar formation, does more injury to the cause of medicine than do all the cults combined, especially if there is the suspicion of operating purely for the fee. This young lady was exposed to very little danger, lost not to exceed fifteen hours of her time in coming to the office five times, had no resulting scar and saved considerable money besides.

I am not writing this rejoinder with any hope of convincing any considerable number of ultra-thyroidectomists. Most of these will not be convinced until the vast majority of their goitre patients will be cured by their less daring and more conservative competitors. My suggestion to the latter class is to try this method first on that class of cases on whom they cannot obtain a cure by medicine and diatetic regimen and yet who are hardly suffering enough to justify a radical operation. This is the way I proceeded in my work: First, the simpler ones and later the more severe ones until now I am curing at least ninety-five per cent of my goitre patients by phenol injections. If the method is carefully employed as advised in my original article (Nebr. State Medical Journal, July, 1924) the results will, I am positive, surprise them. They will gradually try it out on more and more severe cases until finally operative procedures will be limited to a relatively small percentage of all the cases seen.

The man who coined the phrase, "history repeats itself," said a lot. It is, indeed, strange how every succeeding generation of physicians has to go through the same routine of errors before they see the light. June 2, 1902, I reported the first case of successful reduction of double congenital hip dislocation performed in this country. During the reading of my paper I made the statement that the thighs had been put up at ninety degrees flexion and ninety degrees abduction. The first man who got up to discuss the paper was a Professor of Orthopedic Surgery who made substantially the following remarks: "Dr. Ochsner not being an orthopedic surgeon cannot be expected to use orthopedic terms properly. In the first place, it is impossible to put the limbs in the position which he described. In the second place if it were possible no child could stand having the limbs in the position described for a period of six months." Two other Professors of Orthopedic Surgery got up and virtually repeated the above statement. When the discussion was over I showed the picture of the little child with the legs in the position which the learned gentlemen said could not be assumed or maintained. The snicker that went through the audience of approximately two hundred who heard the paper and the discussions very greatly displeased the three learned professors.

The above and a number of similar experiences have convinced me that if you can get three great authorities to unequivocally condemn a certain procedure and positively state that a certain thing cannot be done you can be reasonably sure that it has already been accomplished or that it can be done quite readily. If I can get two more professors to condemn the method then I will feel confident that within ten years the aqueous solution of phenol injection will replace thyroidectomy in at least ninety-five per cent of all the cases of thyroid disease which are now being operated upon just as it has already done in my practice.

Pardon me for this lengthy letter, but I feel that the subject under consideration is an important one and the quicker it is settled right the better for both the public and the profession.

I beg to remain, Fraternally yours,

Edward H. Ochsner.
2155 Cleveland Ave., Chicago.

NEBRASKA STATE MEDICAL ASSOCIATION AUDIT

Lincoln, Nebraska,
February 16, 1925.

Nebraska State Medical Association,
Lincoln, Nebraska.

Gentlemen:

We have made an audit of the books and records of your Secretary, Dr. R. B. Adams, for the year 1924, and submit the following report of our findings:

We examined the records of cash receipts as evidenced by the membership records, and tested the other sources of cash collections. We examined the cancelled checks on the various funds, and reconciled the bank accounts as of December 31, 1924. We verified, by correspondence with the banks and other depositories, the amounts of cash and securities held as of December 31, 1924. These are set out in detail in the exhibits attached hereto. The checking accounts are as follows:

General Fund — Peters National Bank, Omaha, Nebraska.

Journal Fund — First National Bank, Omaha, Nebraska.

Defense Fund — Peters National Bank, Omaha, Nebraska.

We believe that all cash has been properly accounted for, and that all disbursements were made by proper authority.

The following Exhibits comprise our report:

Exhibit A — Cash Receipts and Disbursements — Year 1924 General Fund.

Exhibit A-1 — Statement of Investments — Year 1924 General Fund.

Exhibit B — Cash Receipts and Disbursements — Year 1924 Journal Fund.

Exhibit B-1 — Statement of Investments — Year 1924 Journal Fund.

Exhibit C — Cash Receipts and Disbursements — Year 1924 Defense Fund.

Exhibit C-1 — Statement of Investments — Year 1924 Defense Fund.

It will be noted that we have attempted to classify the receipts and disbursements in a manner to give some idea relative to the progress made during the year. Prior to this year, it has been the practice of the Association to pay a part of the expenses the month following actual incurrence. During the year 1924, their policy was changed so that all expenses are now paid in the month actually incurred. For this reason, the disbursements record 13 months expenses for certain items, while the receipts are on the 12 months basis. The actual progress made is, therefore, not fully represented by our report, but in the future, a better statement of the conditions will be had, if the present policy is continued.

We are offering your secretary a few suggestions for changes in the bookkeeping procedure. We believe a few changes will make it possible to get a better analysis, and understanding of the various sources of revenue and expenses.

Respectfully submitted,

MARTIN & COLE,
By Dana F. Cole.

EXHIBIT A
Nebraska State Medical Association
General Fund
Statement of Cash Receipts & Disbursements
Jan. 1, 1924 to Dec. 31, 1924

Cash Receipts:			
Membership Dues		$5,760.00	
Interest Received — Peters Trust Co.		232.67	
Interest Received — Bank Balances		33.45	
Sale of Furniture		10.50	
Total Cash Receipts			$6,036.62
Cash Transferred to Other Funds:			
Journal Fund		$2,016.00	
Defense Fund		1,152.00	$3,168.00
Balance Available for General Fund			$2,868.62
Cash Disbursements:			
Salaries:			
Dr. R. B. Adams		$ 650.00	
Office & Administrative Expense:			
Rent	$266.25		
Telephone	51.94		
Printing	235.20		
Stamps & Office Supplies	206.95		
A. S. Van Mansfelde, Salary (See Defense Fund)	12.00		
Sec. State Fee	1.00		
Insurance Premium	5.00		
Moving Expense	15.00		
Typewriter Purchased	60.00	$ 853.34	
Miscellaneous Expense:			
Councilor Expense	$409.00		
Program Talent	50.56		
Railroad Fare	10.06		
Madeline Hillis	50.00		
Dinner, Fontenelle Hotel	46.00	$ 565.62	
Convention Expense:			
Representative 1924 Convention	$130.00		
Dr. J. S. Welch—Expense to A. M. A.	51.08		
Dr. R. W. Fouts — Expense to A. M. A.	35.89		
Dr. A. D. Dunn—Expense to A. M. A.	44.86	$ 261.83	
Total Disbursements Year 1924			$2,330.79
Excess of Cash Receipts Over Cash Disbursements			$ 537.83
Cash on Hand Jan. 1, 1924			434.82
Balance — Cash on Hand Dec. 31, 1924			$ 972.65

EXHIBIT A-1
Nebraska State Medical Association
General Fund
Statement of Investments
Jan. 1, 1924 to Dec. 31, 1924

Investments on Hand Jan. 1, 1924:		
Cash Held by Peters Trust Co., Omaha, Nebr.	$ 202.67	
Securities Held by Peters Trust Co., Omaha, Nebr.	3,500.00	$3,702.67
Balance in Account — Omaha Loan & Building Assn., Omaha, Nebr.		1,075.38
Total Jan. 1, 1924		$4,778.05
Additions to Investments During Year 1924:		
BY: Interest Credits — Peters Trust Co.	$ 202.50	
Dividend Credits — Omaha Loan & Bldg. Assn.	62.71	$ 265.21
		$5,043.26
Withdrawals During Year 1924:		
Peters Trust Co. — Transferred to Checking Acc't		$ 232.67
Investments on Hand, Jan. 1, 1925		$4,810.59
Represented by:		
Cash Held by Peters Trust Co., Omaha, Nebr.	$ 172.50	
Securities Held by Peters Trust Co., Omaha, Nebr.	3,500.00	
	$3,672.50	
Balance in Account — Omaha Loan & Building Assn.	1,138.09	$4,810.59

EXHIBIT B
Nebraska State Medical Association
Journal Fund
Statement of Cash Receipts & Disbursements
Jan. 1, 1924 to Dec. 31, 1924

Direct Journal Receipts:			
Advertising Space		$5,573.21	
Cuts		86.86	
Copies Sold		3.60	
Subscriptions to Journal		70.50	
Dividend Cooperative Advertising		142.59	
Total Direct Receipts			$5,876.76
Share of Dues Received from General Fund			2,016.00
Total Receipts from all Sources			$7,892.76
Direct Journal Disbursements:			
Salaries:			
F. A. Long	$1,275.00		
Ivy Campin	792.32		
A. Erixon	750.00	$2,817.32	
Publication Expenses:			
Huse Publishing Co.	$4,279.61		
Baker Bros. Engraving Co.	293.96		
Capital Engraving	74.57		
Universal Press Clipping	45.50	$4,693.64	
Miscellaneous Expenses:			
Reporting A. C. S. Convention	$ 35.00		
Miss Erixon's present	45.00		

Chamber of Commerce	3.75		
Subscriptions	4.00		
Dinners	8.25		
Omaha Expenses — Ivy Campin	7.92	$ 103.92	
Total Direct Disbursements			$7,614.88
Excess of Cash Receipts Over Cash Disbursements			277.88
Cash on Hand, Jan. 1, 1924			$2,926.55
			$3,204.43
Investments made during year (Omaha Loan & Bldg. Assn.)			1,000.00
Balance Cash on Hand, December 31, 1924			$2,204.43

EXHIBIT B-1

Nebraska State Medical Association Journal Fund

Statement of Investments Jan. 1, 1924 to Dec. 1, 1924

Investments on Hand, Jan. 1, 1924:			
Balance in Account — Omaha Loan & Bldg. Assn., Omaha, Nebr.		$1,091.15	
Balance in Account — Mutual Savings & Loan Assn., Omaha, Nebr.		$1,154.36	
Total Jan. 1, 1924			$2,245.51
Additions to Investments During Year 1924:			
BY: Cash Deposited Omaha Loan & Building Assn., May 27, 1924			$1,000.00
Dividend Credits, Omaha Loan & Bldg. Assn.:			
July 1, 1924	$38.23		
Jan. 1, 1925	58.54	$ 96.77	
Dividend Credits, Mutual Savings & Loan Assn.:			
June 30, 1924	$34.62		
Dec. 31, 1924	35.64	$ 70.26	
Total Dividend Earnings During Year 1924			$ 167.03
Investments on Hand, Jan. 1, 1925			$3,412.54
Represented by:			
Balance Omaha Loan & Building Assn., Omaha, Nebr.		$2,187.92	
Balance Mutual Savings & Loan Assn., Omaha, Nebr.		1,224.62	$3,412.54

EXHIBIT C

Nebraska State Medical Association Defense Fund

Statement of Cash Receipts & Disbursements Jan. 1, 1924 to Dec. 31, 1924

Cash Receipts:			
Share of Dues Received from General Fund		$1,152.00	
Interest Received—Peters Trust Co.		175.00	
Interest Received — Bank Balances		.33	
Total Cash Receipts			$1,327.33
Cash Disbursements:			
A. S. Von Mansfelde, Salary	$638.00		
A. S. Von Mansfelde, Expenses	100.00	$ 738.00	
Attorney Fees:			
H. A. Bryant, 1923 Services	$550.00		
H. A. Bryant, 1924 Services	425.00		
John C. Mullen	150.00	$1,125.00	
Total Cash Disbursements			$1,863.00
Excess of Cash Disbursements Over Cash Receipts Year 1924			$ 535.67
Cash on Hand, Jan. 1, 1924			536.09
Balance Cash on Hand, Dec. 31, 1924			$ .42

Note:

The following amount is owing to H. A. Bryant for Attorney Fees for bills rendered during the year as follows:

Oct. 17, 1924	$ 525.00
Dec. 22, 1924	650.00
Total Due Dec. 31, 1924	$1,175.00

EXHIBIT C-1

Nebraska State Medical Association Defense Fund

Statement of Investments Jan. 1, 1924 to Dec. 31, 1924

Investments on Hand Jan. 1, 1924:			
Cash Held by Peters Trust Co., Omaha, Nebr.	$ 175.00		
Securities Held by Peters Trust Co., Omaha, Nebr.	2,500.00		
Total, Jan. 1, 1924			$2,675.00
Interest Credited During Year			175.00
			$2,850.00
Cash Transferred to Checking Account During Year			175.00
Investments on Hand, Jan. 1, 1925			$2,675.00
Represented by:			
Cash Held by Peters Trust Co., Omaha, Nebr.	$ 175.00		
Securities Held by Peters Trust Co.	2,500.00		$2,675.00

MEDICO-LEGAL DEFENSE DEPARTMENT: THE LAW

CHAPTER X.—MEDICO-LEGAL DEFENSE.

Section 1. The Medico-Legal Defense Department of the Nebraska State Medical Association shall be under the supervision of a committee of three. This committee shall be known as the Medico-Legal Defense Committee and shall consist of the secretary of the State Medical Association who shall act as secretary of the committee, and two other members who shall be elected by the house of delegates, according to Chapter VIII, Section 1, of the By-Laws governing our association, and serve for the term of two years, provided that in the original organization of the committee, one member shall be elected for a term of one year.

Sec. 2. On and after their election, it shall be the duty of this committee to effect such organization as they may see fit and to adopt rules for their guidance and for the guidance of members of the State Medical Association in Medico-Legal Defense matters, not set forth in the constitution and by-laws. It shall be their duty to investigate all claims of malpractice against members as herein set forth, to adjust such claims in accordance with equity where possible, and if claim is unjust or damage sought excessive, to lend such help as they may deem proper, but they shall not pay or obligate the association to pay a judgment against a member or court costs of any suit.

The chairman of this committee shall receive a salary of $50.00 per month, and $200.00 annually, or as much as may be necessary for office and traveling expenses. Members of the committee, except the chairman and any member of the profession serving as witness, shall receive $10.00 per day for traveling expenses for all time used in defense service.

Sec. 3. The Medico-Legal Defense Committee shall elect a member of the Bar of Nebraska as a legal counsel of the association, and is authorized to pay such counsel an annual retainer fee. The proper fees for defending members of the association for alleged malpractice shall be paid out of the Medico-Legal Defense Fund, provided that the member has placed his case in the hands of the association in accordance with the regulations adopted by the association.

Sec. 4. All debts contracted by medico-legal defense work shall be paid by the treasurer of the State Association from the Medico-Legal Defense Fund on warrants drawn by the committee against the treasurer of the Nebraska State Medical Association as provided by the constitution and by-laws.

Sec. 5. The Medico-Legal Defense Committee shall at each annual meeting of the state association make to the house of delegates a detailed report of all expense incurred and work done during the year next preceding the meeting.

Sec. 6. At the end of each year the sum of $1.00 for each member shall be set aside by the treasurer of the state association as a special defense fund to be called the Medico-Legal Defense Fund. This fund shall be kept separate from other moneys of the Association and shall be used only for legal defense of such members as shall have contributed to said fund and who are threatened with or prosecuted for alleged malpractice as herein set forth.

Sec. 7. Every member of the Nebraska State Medical Association who has paid all dues, assessments or other charges assessed or levied by the Nebraska State Medical Association for the current year shall be entitled to receive, without expense, upon application therefor, the services of an attorney and counselor at law in any action for malpractice brought against such member in any court within the state of Nebraska on the following conditions, and not otherwise:

Sec. 8. Any member desiring to apply for malpractice defense hereby provided shall immediately upon receipt thereof send to the secretary of the Nebraska State Medical Association any letter, process of court or other evidence of threatened litigation in connection with such malpractice.

Sec. 9. It shall be the duty of the secretary to forthwith examine the financial records of the Nebraska State Medical Association and if such member so applying is found to have paid all arrears, dues or other charges due to the Nebraska State Medical Association, the secretary of the Nebraska State Medical Association shall forthwith send to such counsel the papers received from the applicant. If he shall find that such applicant has paid all arrearages due the Nebraska State Medical Association, a formal application for defense, containing authority for the said association, through its attorney to defend the action and granting to the association and its attorney sole power to conduct the defense thereof, and agreeing not to compromise or settle said claim for damages for said alleged malpractice without the consent of the medical association or its attorney. The said applicant shall furnish and return to the secretary with his application duly executed, a full, accurate and complete history of his treatment of the case of which the alleged malpractice arose, giving dates, names of witnesses, nurses and other attendants, all of which information shall, upon its receipt by him be investigated by the committee, and if the case is just, be forwarded by the secretary of the Nebraska State Medical Association to the counsel of the association.

Sec. 10. If, on the other hand, the secretary finds that any member so applying, has not paid all arrearages as herein specified, then and in that case, he shall return at once to the applicant all papers or memoranda received by him from said applicant, together with a statement that he is not entitled to defense and the reason thereof.

Sec. 11. It is further understood between each and every member of the Nebraska State Medical Association that under no conditions will the Nebraska State Medical Association pay any sums awarded in settlement, compromise or verdict or otherwise, against any member sued for alleged malpractice, and each member in applying for services of the attorney of the association in any malpractice case shall agree not to obligate in any manner the Nebraska State Medical Association for any purpose. Further, the association will not obligate itself to defend any case instituted before the adoption of these articles nor any case started before the physician became a member of this association.

Sec. 12. Upon the receipt of notice by the secretary of the Nebraska State Medical Association, from a member of the association, that suit has been commenced against him, the secretary of the Medico-Legal Defense Committee shall forward to such member a blank form, which the defendant physicion shall promptly fill out and return to said secretary.

AN X-RAY IDYL (NOT IDEAL)

How dear to my heart are the scenes of my childhood,
When fond recollection presents them to view.
The days when I ate all the things that I wanted
Pies, cakes, fruit and candy and good Irish stew.
The rich black plum-pudding was brought on the table
Ablaze with fine brandy that cast a red glow
On faces that smiled.—We ate all we were able.
But those days of good brandy were long, long ago.
Alas! I am getting so aged and seedy
My back and my tummy have both gone astray.
So the doctors all said an x-ray must be taken
In order to find out the how and the why.
In the wide spreading region they call the abdomen,
Where pylorus, colon and my poor tummy dwell.
They ran down a tube 'bout as long as a fire-hose,
On the end was a bucket that dropped down my well.

CHORUS

That silver lined bucket, that peanut-shaped bucket
That small fiendish bucket that hung in my well.
Then came a glass syphon that looked like a syringe
Which every ten minutes pumped the contents all out.
It brought up bacilli, bacteria and microbes,
Some small floating germs and, I think, a few trout.
The next thing I did, (Oh, I blush to recall it)
Was to strip 'till I stood in my new union suit.
Then I donned a short nightie ('twas right in the fashion),
For I know that the hem did not reach to my boot.
The doctor escorted me into the dark room,
Much darker I think than old Egypt can be,
Made me drink 'bout a gallon of milk mixed with bismuth
Stood me up 'gainst a slab that was tall as a tree.
He turned on the light while a nurse stood beside him,
They explored all my innards and looked me clean thru.
They watched that white fluid as it ran down the jungle
And mosied around like the wandering Jew.
Then they tipped back that slab 'till it came to a level,
And talked while they saw all the wheels going round.
I felt like a cadaver who had gone to the—revel,
But I gritted my teeth and ne'er uttered a sound.
When I got on my feet I walked into the next room.
('Twas filled with buzz wires and big bulbs by-the-way,)
I was squeezed 'gainst a board and I tried to "look pleasant"
While a smiling young chap came and took an x-ray.
They showed me the photo and sure it was funny
Looked just like a blimp falling into the sea.
My poor tummy had dropped down a couple of stories
And landed some place where it ought not to be.
I've been put on a diet; a hard thing to follow.
I must not eat sweets not touch acids—Oh my!
Lest they fight in my tummy and turn into gases
Which some day might blow the whole works up sky high.
I am made to eat spinach and turnips and carrots
And all the old things which I greatly dislike.
If the doctor persists in this horrible menu
You bet your sweet life I wont's stand it—I'll strike!
—Written by a patient in an Omaha hospital.

THE FAMILY DOCTOR

By Edgar A. Guest.

I've tried the high-toned specialists who doctor folks today;
I've heard the throat man whisper low, "Come on, now let us spray."
I've sat in fancy offices and waited long my turn,
And paid for fifteen minutes what it took a week to earn,
But while these scientific men are kindly, one and all,
I miss the good old doctor that my mother used to call.
The old-time family Doctor! Oh, I am sorry that he's gone;
He ushered us into the world and knew us every one,
He didn't have to ask a lot of questions, for he knew
Our histories from birth and all the ailments we'd been through,
And though as children small we feared the medicines he'd send,
The old-time family doctor grew to be our dearest friend.
No hour too late, no night too rough for him to heed our call;
He knew exactly where to hang his coat up in the hall;
He knew exactly where to go, which room upstairs to find
The patient he'd been called to see, and saying: "Never mind,
I'll run up there myself and see what's causing all the fuss."
It seems we grew to look and lean on him as one of us.
He had a big and kindly heart, a fine and tender way,
And more than once I've wished that I could call him in today.
The specialists are clever men and busy men, I know,
And haven't time to doctor as they did long years ago.
But some day he may come again, the friend that we can call,
The good old family doctor who will love us, one and all.

(Copyright, 1921.)

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
1012 Terminal Building, Lincoln, Nebraska.

F. A. Long, M. D., Editor....Madison, Neb.
R. B. Adams, M. D., Associate and Business Manager....Lincoln, Neb.
1012 Terminal Building, Lincoln, Neb. Tele. B2625.

COMMITTEE ON JOURNAL AND PUBLICATION.
F. A. Long, Chairman....Madison
W. O. Bridges....Omaha
B. F. Bailey....Lincoln
R. B. Adams, Ex officio....Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewriten, double-spaced, not the carbon, submitted.

Reprints should be ordered from the printer, The Huse Publishing Co., Norfolk, Neb.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. X April No. 4

Annual Meeting, Lincoln
May 12, 13, 14

THE RIGHT OF THE ESSAYIST TO BE HEARD

The manner in which the various features of a medical meeting are carried out makes the meeting either a great success or a relative failure in the estimation of those attending.

Promptness at the hour of opening the sessions, holding the readers of papers to their allotted twenty minutes, rapid-fire discussions limited to three minutes and no injection of extraneous matter into the published program is absolutely necessary to conserve the rights of all the essayists.

The doctor who gets a place on the program obligates himself to prepare and read a paper before the sessions at the specified time and within the limit of the allotted twenty minutes. Those who go to the meeting place assume a moral obligation to do their part toward furnishing an audience for the speaker.

Pointed discussions are a valuable part of a program: Desultory discussions fritter away valuable time and tire and disgust the audience.

The rights of all the essayists who have places on the program are paramount and must be respected if the greater good is to come from the meeting.

Better that all the papers on the program be read without discussion, than that one essayist's time be usurped.

All this is elementary, but we need to refresh our memories lest we forget.

THE LOSS OF ANOTHER UNIVERSITY MAN

As one glances back a couple of decades in the University of Nebraska faculty history, there is an all too frequent disappearance of a department leader. H. B. Ward, Dean Richards, Prof. Hill, Dean Roscoe Pound, Frederick Clements, Coach Yost and a score or more of others could be named. Now it is Dean Irving Cutter of the Medical College. These men have gone on up the ladder to more inviting, more lucrative position. We cannot blame them. On the contrary we congratulate them and in certain individuals like Pound and Cutter we enjoy a feeling of pride to have produced such a high class product in our state and its institution. But the question arises, are these losses proper? Is it profitable to lose such assets? Is our policy not penny wise and pound foolish to some degree? If we raised our salaries in more carefully selected cases, would we not retain these men and in them build more of the Charles E. Bessey type of pride in Nebraska's great university, so that like Bessey they would longer remain and build and longer decline outside offers.

Dr. Cutter goes to one of the largest medical schools in the world. It has an immediate building program of unusual proportions. This program is financed in an assured manner, and may we add that we think Northwestern University has chosen wisely in its selection of Irving Cutter.

Nebraska will continue to feel Cutter's influence in the future not only through the splendid medical college he has builded in her university, but through the continued influence his work in the Mississippi Valley and America will have through medical education and hospital development.

—J. S. Welch

WHAT SHALL WE DO WITH THE TUBERCULOUS?

Tuberculosis is a much discussed subject, and to speak of it editorially requires that one have something to say, so to speak. Many of the papers one reads in the literature of the day are full of good suggestions, and often bring out new points or rediscover old ones of much value, but there is one that affects the community of Nebraska in particular, and of this one I want to say a few words.

We see many cases of clinical tuberculosis and very few that may be called consumption. But what are we to do with all these cases of tuberculosis? Only a very few can afford to go "away", meaning to a supposedly better climate and the benefits of an institution devoted solely to the care of these patients. At the other end of the line are a few who may be sent to a state institution provided for their care, that is, in case there is available space for them in that institution. This leaves the bulk of the tuberculous that most of us see, with only the general hospital or their own homes as a place in which to be treated.

General hospitals still admit tuberculous patients with a great deal of fear, however ungrounded it may be, and provide practically no special facilities for their care. Even this is far superior to treatment in the home in the case of most patients, yet open to great improvement with a little education and a very little added expense. At home only one patient in about ten will follow instructions and there is no one to teach them and impress upon them the routine that is necessary in the care of this disease, and there is very much less protection for the family and the community than can be obtained by even a few weeks training in an institution.

It seems to me there is much to be done in our campaign against this insidious and wide spread disease, and if the doctors in a community will stop throwing up their hands and saying "go to a better climate", and make an effort at the education of the public, especially that part controlling the hospital facilities, a new stride may be made in the control and eradication of this plague. Much more concerning the early diagnosis and rigid education of the patient to understand the nature of his illness and the need for long continued care and many other equally important points, might be emphasized if space permitted, but the writer wishes the reader to think about one proposition in particular: "What can I do with my tuberculous patient to best protect him and the community?" "How can I best educate the tuberculous patient to care for himself and protect his family and the community?"

—George W. Covey.

DELINQUENT DUES

Those who have not paid their dues before April 1st are delinquent and must be reinstated at once to assure the continuance of the Journal and to maintain their membership and defense protection.

--R. B. Adams, Sec.-Treas.

DR. INEZ C. PHILBRICK, PRESIDENT NEBRASKA ASSOCIATION OF MEDICAL WOMEN

Dr. Inez C. Philbrick, Lincoln, Nebr., was born at Bloomington (then Tafton) Wisconsin, May 19, 1866.* Her father, Philetus H. Philbrick, was for many years professor of Civil Engineering at the State University of Iowa. Her mother was Malah Brackett of a prominent New England family. Dr. Philbrick graduated from the State University of Iowa a bachelor of science in 1886 and received the A. M. degree three years later; taught the sciences in the Fargo, N. D. high school several years; graduated from the Woman's Medical College of Pennsylvania in 1891; was an interne in Blockley Hospital, (Philadelphia General), Philadelphia, 15 months, a position won by competetive civil service examination.

She located in Lincoln in March 1893 since which time she has been in the active practice of the profession. She has done a great deal of welfare work, medical and social, has been active in medical organization work and has been honored by various medical bodies. She is president of the Nebraska Association of Medical Women for the current year.

Its enemies claim that Prohibition comes high but not dry.—Philadelphia North American.

---

*Dr. Philbrick wants to help explode the legend that woman is any more afread to tell her age than is man.

WHAT SUGGESTIONS HAVE YOU TO IMPROVE EDUCATIONAL METHODS THAT MAY BETTER PREPARE STUDENTS FOR THE PRACTICE OF MEDICINE?

The query as above stated was incorporated in the questionnaire submitted to the entire membership of the Nebraska State Medical Association—answers were received from one in three of the total membership.

It would seem from the replies received that the medical profession of Nebraska is not only keenly interested in educational problems but that it is not altogether in sympathy with the modern trend of medical education.

The Journal of the A. M. A. (Vol. 84 No. 4 and subsequent numbers) contains a special article on Medical Education and Medical Service by William Allen Pusey, M. D., President of the A. M. A., in which he refers to medical education as being "So costly in time and money, and in sacrifices of a very important sort, that troubles in medical service are arising that demand our attention." Pusey sees in the every increasing demands upon the student, demands which not only tax the purse but all his intellectual resources as well, an explanation for the general trend of the medical profession to the cities and in the cities to the specialities—with the "inevitable result that the family doctor is 'passing with the horse' and the rural districts more and more feeling the need of physicians. More than this the Army, Navy and Public Health Service are experiencing difficulty in finding graduates of medicine who are attracted by the modest salaries paid by these organizations. Pusey concludes that "evidence is accumulating that we are producing only a very costly sort of physician and are not now producing men to do the ordinary services of medicine for ordinary people in the cities or in the country."

The problem of adequate medical service to the residents of rural communities is as yet not critical in any considerable part of our nation but it surely will become so within the life of our coming generation unless steps are taken to remedy the existing state of affairs.

We are developing an aristocracy of medicine. Already the question is seriously debated as to the possibility of a poor boy completing his medical training without sacrificing his health. The fundamental branches of medicine are presented in such a technical way as to stress the brightest of minds and the most vigorous of bodies, while the hard working medical student of average mental capacity falls by the way side in his efforts to carry the ever increasing load. Much of the burden has no direct bearing upon the practice of medicine. A minimum number of laboratory hours are required by the Council of Medical Education and they must be filled. Evaluations are almost wholly quantitive; quality is little reckoned with in determining the classifications of schools. The "rule of the thumb" prevails and the Deans and Instructors have little discresion in matters pertaining to the curriculum. Medical education has been standardized in order to bring all medical schools to a like standard. A few schools, such as John Hopkins and Harvard, very properly set their standards high with the laudable ambition to train men for highly specialized service but it is not the part of good judgment or fair consideration to the needs of the community, whether in cities or rural districts, to make such exactions of the schools whose province is to develop doctors for the every day routine of medical practice. If medical schools are not for the development of doctors what may be their function? And if they are not performing their function as best they should what suggestions have the rank and file of the medical profession as exemplified by some 417 members of the Nebraska State Medical Association? Surely our medical educators will be interested in the view point of the hard headed practical physician as representing the cities and the rural districts of a typical mid-western state.

We read:—"Less theory and more practice,"—a common expression in the questionnaire. "Cut out the bunk"—"Study the horse sense side of medicine"—"Give better courses in obstetrics and other branches that are used every day and less of the high brow neurology, etc." "More medicine, less laboratory methods; teach students to think and diagnose without the aid of a lot of laboratory technique." "More practical teaching by practical men." "More emphasis on the common every-day problems." "Make a doctor not a scientist." "Do not kill independence of thought and action by assuming infallibility in laboratory methods of diagnosis." "Most students are over booked and under practiced." "Reading medicine in old Doctor's offices as of old would turn out more useful family doctors than does the present plan." "Entrance examinations unnecessarily high. Cut out some of the bunk and educate practical doctors." "Teach a good general course of medicine that a man may be able to learn before all his youth is gone and without wrecking his nervous system." "Cut out the unnecessary things that are not used in the practice of medicine and quit trying to make specialists of every student." "Cut out the unnecessary details in didactic work and rub the instruction in by practical work." "Students in medical schools should be taught more of the minor and practical subjects, things with which they will come in contact in their early years of practice." "I believe that the student of today is taught to rely too much on laboratory methods, so that if he enters practice in the smaller communities where these essentials are lacking, he is lost for a time and must of necessity orient himself to the conditions for which he is unprepared." "Medical graduates should be more thoroughly taught to do something, rather than to be something in order that they may render better service, accomplish more and their patients be better satisfied." "Abolish long lectures on rare conditions. intricate operations and complicated procedures and devote more time to common diseases and minor ailments." "Too much time devoted in clinical years to many specialties with consequent hodge-podge knowledge. much of which will be dead wood later." "The student's time should not be so crowded. None of his work is thoroughly done because too much is crammed in the time. Teach fewer facts (and fancies) and more principals of the art of medicine. The years of study shortened." "Certainly do not add any more to an already overloaded curriculum. A boy of earnest intent and wide awake intelligence has no chance now without financial backing." "Many good boys are handicapped at present on account of prohibitive expenses incident to 6 or 7 years of active college work." "No thought of raising the standard should be entertained. There is danger of too many small communities being without available help. This condition exists already in many territories which could not be considered remote." "The educational methods by which the student must now get into reputable medical schools are nearly prohibitive to the poor student—if carried further, only the rich can hope to study medicine." "Let us not allow the medical schools to be closed to the poor but efficient young man by prohibitive requirements." "Men who have spent seven years of their lives and $10,000 to $12,000 to get a medical training will not settle, or if they do, will not stay in small towns." "Requirements and expense of medical training are so high now that in a few years the cults will have the field mostly to themselves."

A reversion to the preceptorial system is suggested in many of the replies. Thus we read "apprenticeships with a busy general practitioner during vacations would be a valuable adjunct to schooling." "Why not require every doctor before licensing to have been engaged in general practice in the office of an older and well established colleague. In other words return to the apprentice system." "It would be very useful if every student would be apprenticed to some preceptor—old practitioner." "I believe that three to six months, under a good general practitioner would improve the practical working knowledge of the medical student."

There is an unmistakable demand for the teaching of medical economics. "Teach medical economics," says one, "so that they do not have to spend several years learning how to handle people and how to charge for services. The young doctor knows nothing about them." And again—"Teach salesmanship and the Golden Rule." "Put into the required curriculum something of the fundamentals of a business education," says another and he adds, "I have expressed to Colwell of the A. M. A. and Craig of the College of Surgeons; they concur but as yet nothing has happened." "Introduce business training—not to commercialize medicine but to enable the physician to maintain the respect of his community "is a suggestion of one while another would "cut out the bunk about practicing for the good of humanity given by some of the older men who have made their pile, and introduce courses in how to charge, what to charge and how to collect." And finally we read that "the only medical man who can keep up to date is the man who looks after the business side of his profession and thereby earns and collects sufficient to get to medical meetings and clinics."

These trite quotations, taken from the questionnaire, follow with remarkable similarity the arguments of Pusey in the Journal of the A. M. A. Indeed, it may be truthfully said that whether you talk with practitioners of medicine, with teachers of medicine or with medical students, you find general dissatisfaction with the modern trend of medical education. But just as with the weather so with the problem of medical education "while everybody talks about it, nobody does anything about it."

The Council of Medical Education should be given unstinted praise for their efforts in behalf of medical education but such contributions as that of Pusey, together with such revelations as the above should impress the Council with the imperative need of taking stock of the whole situation. A frank inquiry may convince the Council of the necessity of lightning the burden of the premedical and medical years of students, and in a way that will not detract from practical training. By way of a modest suggestion would it not be wise to restrain the enthusiasm of the Chemist who seems to be running away with the whole machinery? Not content with over-loading the premedical and medical student with chemistry he has literally confiscated Physiology and Pharmacology. What happens to the frog is of more importance than a clear understanding of the normal functions of the human body. The student may not know a blessed thing about the function of the liver or kidney but he can write volumes upon muscular fibrillations, and the effect of nicotine upon the frog when injected into the frog's belly. He may learn little of the functions of the pancreas but his daily exercises on the smoke drum affords him ample opportunity to learn the action of the galvanic current upon fresh nerve muscle preparation of a frog. But who wants to be a frog doctor?

Pusey would fix the minimum requirements for the practice of medicine at four years in an accredited high school and four years in a medical school, not less than one year of the four to be devoted to hospital work. Such a program would of necessity eliminate much of the technical requirements in the fundamental branches of medicine—a most desirable eventuality, in that probably three-fourths of all that is now required in chemistry, embryology, physiology and pharmacology has no practical application to the general practice of medicine. But the process of elimination might well be applied, though to a lesser degree, to so-called clinical years in which so much is required by highly specialized instructors.

An educator recently remarked that the greatest problem of medical education today is that of elimination of medical students. May I venture to suggest that the educators in medicine might more profitably engage their activities in the elimination of irrevalent subjects in the curriculum? Let us close this diatribe by again voicing the sentiment "Less theory and more practice". "More medicine, less laboratory instruction."

—Palmer Findley

A Russian poet has just taken back seven trunks full of patent medicines with him. This seems to us to explain quite a lot of Russian literature.—Punch.

EDITORIAL PARAGRAPHS

The Abbott Laboratories and the Frank S. Betz Co., are represented in the advertising pages this month with new ads. Read the ads!

An insurance organization in St. Louis, recently born, will use chiropractors only, as examiners. This is one way of adjusting things.

Largely through the enthusiasm and munificence of Dr. Harold Gifford, Omaha oculist, Fontenelle Forest has been set aside as a perpetual sanctuary for wild life. No more enduring memorial can man erect for himself.

Because of the increasing number of malpractice suits, it has been thought well to republish the Medical Defense By-Law in this number of the Journal. It should interest every member to know just what medical defense is.

At the annual Councilor's Meeting, in Omaha, January 12, it was decided to have an audit of the books and accounts of the Association made and to have a more modern system of bookkeeping inaugurated. The audit appears in the current Journal.

The National Underwriter is authority for the statement that the deaths from alcoholism were 3.2 per 100,000 in 1923 as against 2.6 in 1922, 1.8 in 1921 and 1.0 in 1920. Unofficial reports indicate that the 1924 mark will be greater than that reached in 1923.

The profession will be interested to know that it has been easier to collect the material for the program for the annual meeting this year, than it has been for the past five years. It is, therefore, reasonable to look forward to an increased attendance and greater interest in the meeting.

Incidental to the repatriation of a million Greeks from Asia Minor, many of whom were quartered in a malarial country, a malarial scourge equal to epidemics of typhus resulted. The American Red Cross purchased 14,000,000 five-grain quinine tablets at an expense of $85,000 and dispatched them to the suffering area.

When some of us were young, it was not so uncommon for families to bury five members of the family from diphtheria within a week. Not much was said about it outside of the immediate neighborhood. Now then in far away Nome, five people having died, they sent an S. O. S. call that reverberated around the world. Antitoxin, dog-sleds, "mushers", airplanes, lone doctor and nurse —all are canonized. "Are times out of joint?" No, no, the world is all right; you and I are out of joint. Osler was right.

Referring to Dr. Findley's analysis of the answers to the questionnaire, one of the leaders in medical education in this state, in a personal communication to the editor says: "I believe the opinions elicited are of more than local importance and afford a most interesting insight into the opinions of a body of very useful and thoughtful practitioners who are habitually silent and into conditions habitually overlooked by those who determine the program of medical education. The Journal will be glad to receive the reaction of other members of the profession to these articles.

An astounding judicial decision in a malpractice case in Arizona is related by Southwestern Medicine, which goes on to say that it throws an interesting sidelight on the attitude of some intelligent members of society toward the practice of medicine.

"(1) A doctor referring a case to specialist is jointly liable with that specialist for the results of the treatment.

(2) The results of the treatment can be presented to the jury without any supporting testimony, for the jury to decide whether the doctor was negligent or not.

(3) The opinion of a non-medical cultist is acceptable as expert testimony, regarding the outcome of a medical or surgical procedure."

Luckily, the jury decided in favor of the defendants.

DR. W. H. WILSON CHIEF BUREAU OF HEALTH

Perhaps no one has had a better practical training leading up to the responsibility, than the new Chief of the Bureau of Health, Dr. W. H. Wilson of Lincoln. When five years of age his parents brought him from the north of Ireland, where he was born in 1856, to Adams county, Illinois. When he was ten years of age his parents moved to Jefferson county, Iowa, where soon after his father died.

He took a high school course, got some normal training, taught a few years, graduated from the College of Physicians and Surgeons, Chicago, in 1884 and received additional training in New York City. He was engaged in practice at Table Rock, Nebr., for many years. He represented Pawnee county in the 1903 and 1905 sessions of the Legislature, and was senator for the first senatorial district in 1907. It was largely through his efforts as a lawmaker that the bill giving the state health department sweeping powers in quarantine and sanitation, the bill creating a state examining board, and the vital statistics law were passed. He was also instrumental in the passage of the pure food and drug law. He was state health inspector from 1907 to 1915; epidemiologist from 1918 to 1921; and has recently been appointed by Governor McMullen, Chief of the Bureau of Health.

THE WESTERN PHYSIOTHERAPY ASSOCIATION

Arrangements are completed for the Seventh Annual meeting of the Association, which will be held at the Little Theatre, Kansas City, Mo., Thursday and Friday, April 16 and 17, under the presidency of Dr. L. A. Marty of Kansas City. A number of men of national reputation will be present to address the members. The medical department of U. S. A. will also be represented. Dr. T. Howard Plank of Chicago will hold a clinic at the General Hospital on the afternoon of April 16. Members of the Association desiring to present cases for diagnosis or operation may make arrangements with the secretary for these cases to have the personal attention of Dr. Plank. The preliminary program is as follows:

"Obstipation" and "Reaction of Degeneration" (Illustrated) Frederick H. Morse, M. D., Boston, Mass.

"Combination of Electrocoagulation and Radiotherapy in Malignant Tumors." Gustav Kolischer, M. D., Chicago, Ill.

Title to be announced, Miles J. Breuer, M. D., Lincoln, Nebr.

"Phototherapy in Hay Fever", J. L. Meyers, M. D., Kansas City, Mo.

"Phototherapy in Skin Diseases". (Illustrated by moving pictures). Lynne B. Greene, M. D., Kansas City, Mo.

"High Frequency Currents," A. David Willmoth, M. D., Louisville.

"Physiotherapy in a General Hospital", E. C. Henry, M. D., Omaha.

"Actinic Rays in the Treatment of Infections", Wm. E. Howell, M. D., Chicago.

"The Mercury Vapor Lamp and the Carbon Arc in Ultra Violet Therapy," A. J. Pacini, M. D., Chicago.

Title to be announced, Curran Pope, M. D., Louisville.

"The Goiter Question", Edward G. Blair, M. D., Kansas City, Mo.

Others on the program will include Drs. Byron Sprague Price, New York City; Burton B. Grover, Colorado Springs; T. Howard Plank, Chicago; and W. B. Chapman, Carthage, Mo.

THE SOCIETIES

Lancaster County Medical Society.

The regular meeting was held at the Orthopedic Hospital, Feb. 7, 1925, at 7:30 p. m., Dr. David C. Hilton, presiding.

In the call for clinical cases, Dr. George W. Covey presented a case of adhesive pericarditis. It was a striking case of pathology in an advanced degree. The retractile pulsation of the left chest was very marked. The abdomen had been tapped eight times. In spite of this handicap the patient is able to lead a fairly comfortable existence.

The case was discussed by Dr. Clements.

In the papers of the evening, Dr. I. W. Churchill presented a paper entitled "Focal Infection or What?"

The doctor in his paper attempted to establish the universality of malaria in Lincoln and vicinity. He presented four cases in which he had definitely found the malarial plasmodium. All these cases having been previously diagnosed under a toxic symptom complex of focal infection.

The paper was variously discussed. In substance the sense of the discussion was one of unwillingness to accept Dr. Churchill's premise that this community is endemically malarial until a more scientific substantiation could be presented.

Dr. F. L. Rogers presented the second paper of the evening, entitled "Diaretic Treatment of Diabetes Mellitus".

Dr. Rogers presented a simple, scientific and practical method of figuring diabetic diets. The doctor set forth the following essentials, i e.:

(1) In order to keep the body in a state of nitrogen equilibrium, the daily diet must contain at least, 66 grams of protein to each kilogram of body weight, a kilogram being 2.2 pounds.

(2) 58%, or for practical purposes 60%, of the protein of the diet is available carbohydrate.

(3) All the carbohydrate is available as such, and a small per cent of the fat which can with safety be ignored.

(4) The ratio of fat to carbohydrate cannot exceed 4-1.

(5) There is a daily requirement of about 25 calories per kilogram of body weight.

(6) 1 gram of carbohydrate—4 calories.
1 gram of protein—4 calories.
1 gram of fat—9 calories.

The doctor concludes that the essential treatment of diabetes is diet with or without insulin.

Inasmuch as the sugar tolerance is the guiding factor in the treatment of any diabetic, a determination of this tolerance should be the first step in the treatment. In order to determine with any considerable degrce of accuracy the ability of a patient to utilize sugar, we must know carbohydrate intake and the carbohydrate output, the difference between the two being the amount the patient is able to utilize, or his sugar tolerance.

The diet of a diabetic person should contain an amount of protein sufficient to keep the body in a state of nitrogen equilibrium, an amount of available carbohydrate which is less than the sugar tolerance, and an amount of fat great enough to make the total diet sufficient in caloric value and not too great to be burned by the carbohydrate. If these requirements cannot be filled, then insulin is indicated that more sugar may be burned.

The third paper of the evening was read by Dr. E. B. Brooks, entitled, "Some Studies in Glaucoma".

The doctor set forth the definition that Glaucoma is a Symptom Complex characterized by an excess of pressure within the eye plus the causes and consequences of that excess.

Pathology: The fluid contents of the eye varies in health and disease. This fluid may be produced (1) from the blood in the choroid which acts as a reservoir, (2) by secretion of glial cells in the perivascular spaces, (3) by secretion from the ciliary body. It passes forward through zonule and through mesh work of the iris angle of the antrum chamber into canal of Schlemm thence into the scleral and conjunctival veins. This escape of fluid may be accomplished by (1) the pull of osmosis, (2) the push of pressure, (3) or a pump-like action.

The veins, lymph spaces and sclera show cellular infiltration; the choroid, retina and optic nerve show atrophy.

Etiology: Age with its characteristic degenerative changes, sex, heredity, errors of refraction, endocrine disturbances, febrile diseases all are casual factors.

Diagnosis: Simple non congestive glaucoma presents increased tension, cupping of the optic disc, diminished central visual acuity, limitation of the peripheral field.

Primary congestive glaucoma presents the above symptoms and in addition the vascualr factor; evidenced by swollen, edematous lids, chemosis, steamy anaesthetic cornea, diliated irregular pupil, cloudy anterior chamber. The glaucomatous halo presents an inner blue or violet and an outer reddish or red zone.

Changes of the visual field are (1) limitation of nasal field, (2) progressive concentric contraction of the whole peripheral field, (3) Ronne's step, that is, a sharp horizontal limitation to the defect in the nasal field, (4) color fields unaffected at first, later show contraction similar to that of white field.

The paper was discussed by Dr. Black.

Regular meeting held at the Orthopedic Hospital, March 7.

In the call for clinical cases:

Dr. Owen reported a case of small calibre stricture of the urethra in a man 25 years of age. The doctor reported doing a resection of the urethra with filling in of the gap by skin graft.

Dr. Czar C. Johnson presented a case of multiple diverticulitis of the descending colon and sigmoid, in a male past 60 years of age. The case was one examined to determine the disability of a workman following a fall and alleged injury to the left side one year previously. The major symptoms were: Constant dull pains in the left side of abdomen which is increased upon exertion, with indigestion and constipation. The major physical findings were: Clinically infected teeth and gums, tympanitic descending colon, hyperalgesia of skin left side of abdomen, extending from 12th rib to pubic arch and rigidity of left rectus. Laboratory findings were: Hyaline casts a few; blood in stools, white cell count 11,000, red blood cells 4,600,000, hemaglobin percentage 75.

X-ray examination: Productive arthritis 3rd and 4th lumbar vertebrae, with anlylosis of the left side of the vertebrae.

Scattered along the descending colon and sigmoid were 18 small diverticules, some appearing to be the size of goose quill and others smaller. Dr. Johnson stated that he presented the case because it was comparatively unusual and because it showed the need of careful and thorough examination in many injuries to prevent injustice to those concerned. He was of the opinion that the injury had not caused this man's present condition.

Dr. E. B. Brooks presented a case of chronic frontal and maxillary sinusitis in a woman 34 yrs. of age. The patient had a long standing complaint of neuralgic pain in the left side of the head.

Radical operative procedures were instituted on both the frontal and maxillary sinuses with excellent results. It was concluded by the doctor that the sinusitis was of dental origin. In his operative procedure he exemplified the possibility of removal of the attachment of the superior obligue without untoward results. He further concludes that complete obliteration of the cavity of the sinus when possible gives a better chance for complete cure.

First paper of the evening was presented by Dr. J. J. Hompes entitled "Sinusitis".

The doctor informally presented his experiences and deductions gleaned from a review of 405 personal operative cases. In his discussion of the diagnosis of Sinusitis it was his opinion that neither the x-ray alone nor trans-illumination alone or both combined can insure 100% correct diagnosis.

He presented a very interesting list of sequelae which had occurred in his series of 405 cases.

In his conclusions Dr. Hompes laid considerable stress on the qualifications which should surround the present eye, ear, nose and throat specialist if he expects to do really efficient work.

The doctor felt that there should be a more careful study of all these patients as it pertains to proper diagnosis. He spoke of the causative factors and advocated definite operative procedure in all these cases in contradistinction to the all too frequently instituted temporizing measures.

The paper brought forth a varied discussion which revealed the fact that there was not a unanimity of opinion concerning the treatment in these cases.

Second paper of the evening was presented by Dr. C. H. Breuer, entitled "Surgical Diathermy".

Dr. Breuer took up the definition of diathermy from medical and surgical standpoints. The various modalities were discussed with a special reference to fulguration and electro-coagulation. He further outlined the technical application of these modalities in the removal of various tumors.

The discussion of the paper was rather general with the prevailing opinion that while the doctor brought out certain points which were of value in handling certain types of tumors, yet that he covered too much territory in his advocacy of the universal adaptability of these modalities to almost every conceivable surgical lesion.

—Arbor D. Munger, Sec.

The Omaha-Douglas County Medical Society.

At the regular meeting February 24th at the University Club, Dr. R. W. Bliss presiding: The program consisting of a symposium on fractures, the attendance being a disappointment to the Chairman, the question of deferring the program to some other time was put to the meeting and decided adversly.

The following took part in the program—"Fractures About the Elbow", R. D. Schrock, discussion opened by W. I. Sucha; "Indications for Open Operations in Fractures of the Femur", A. F. Jonas; "Fractures of the Patella", C. H. Waters; "Fracture of the Tibia", J. W. Duncan; "Carpal Scaphoid Fractures", J. A. Weinberg; "When to Operate and When Not to Operate in Fractures of the Skull", J. Jay Keegan; "What the X-ray Indicates". (To appear in the Journal).

Pending legislation was pretty thoroughly discussed, opinions were freely expressed about various committees having to do with legislative work and a substantial amount was appropriated out of the funds of the society for emergency needs in fostering certain legislation.

March 13, the Omaha-Douglas County Medical society had as guest at a banquet at the Fontanelle Hotel, Dr. Ray Lyman Wilbur, President of Leland Stanford University. In the evening he gave a popular health talk at the Technical High School.

—Earl O. Sage, Sec.

Before the **Madison County Medical Society,** Norfolk, March 10, Dr. A. F. Tyler, Omaha, gave an illustrated lecture on "High Frequency". He also gave clinical demonstrations. Before a meeting of the same society February 17th, Dr. W. R. Peters, Stanton, gave a lecture on the "Treatment of Diphtheria and of Scarlet Fever".

The annual meeting of the **Ninth Councilor District Medical Society** was held at Grand Island under the presidency of Dr. B. R. McGrath. Bad road conditions cut the attendance about fifty per cent of normal. A banquet was given at the Yancy Hotel followed by a number of after-dinner talks on professional relations. Following is the program:

A. D. Munger, M. D., Lincoln, "Focal Infections and Their Relation to the Genito-Urinary Tract".

O. D. Johnson, M. D., Kearney, "A Case of Cancer of the Female Urethra."

C. K. Gibbons, M. D., Kearney, "A Case of Symmetrical Gangrene."

J. G. Woodin, M. D., Grand Island, "Experience with Tropical Diseases".

W. J. Arrasmith, M. D., Grand Island, "Diagnosis of Gall Bladder Diseases".

Operative clinics at the hospital in the morning.

The **Elkhorn Valley Medical Society** under the presidency of Dr. A. P. Overgaard, met at the Pathfinder Hotel, Fremont, March 17th. The meeting began in the forenoon, was interrupted by the noon-day luncheon at which thirty participated, and ended after 4 o'clock. It was the most interesting meeting of the society held in recent years, all the papers presented being of a very high order of excellence. Program follows:

"Common Skin Diseases", C. Tomlinson, Omaha; "Commoner Diseases of the Thyroid, E. L. Bridges, Omaha; "Diseases of the Pancreas", A. A. Johnson, Council Bluffs; "Cancer of the Labia", Max Emmert, Omaha; "Extra Ocular Diseases", J. M. Patton, Omaha; "Group Practice in the Smaller Communities", D. D. King, York.

Dr. Andrew Harvey, Fremont, was elected president; Dr. A. C. Barry, Norfolk, secretary-treasurer, and Dr. D. D. King, York, and Dr. E. W. Powell, Omaha, vice presidents.

HUMAN INTEREST TALES

Dr. Charles L. Swift, of Chicago, has located at Brady.

Dr. Ada Platz, Beatrice, is reported seriously ill at a local hospital.

Dr. R. W. Place, for a short time at Beemer, has located at Wood Lake.

Dr. E. W. Martin, veteran Fremont physician, celebrated his eightieth birthday recently.

Dr. C. L. Mullins, Broken Bow, has been ill for some time and is undergoing treatment in Omaha.

Dr. Dwight C. Sigworth, Norfolk city physician, has gone to Waterloo, Iowa, to be gone at least a month.

Dr. Arthur L. Smith, Lincoln, returned late in February, from a five-months period of study in Vienna.

Dr. D. A. Medders, Omaha, who has been doing special work at Johns Hopkins since last September, has returned to Omaha.

Dr. H. M. McClanahan has returned from a cruise that took him through the Panama Canal and landed him at San Francisco.

Dr. H. W. Orr, Lincoln, as Colonel Orr of Governor McMullen's staff, was in attendance at the Inauguration of President Coolidge.

Dr. J. S. Welch, Lincoln, attended the meeting of the Council on Medical Education, Chicago, as delegate from Nebraska, early in March.

The new Lincoln General hospital with Dr. John M. Mayhew as chief of staff, it is announced will be ready for patients about April 1st.

Dr. E. V. Neuman, Wausa, has disposed of his equipment and will take special work in Chicago to fit himself to specialize in Obstetrics.

Dr. J. W. Hawes, Fairbury, has been appointed city physician of Kansas City. He is a World War veteran and a wearer of the croix de guerre.

Dr. and Mrs. J. V. Beghtol, Hastings, enjoyed a mid-winter trip to New Orleans. From the latter place they sailed to New York City and returned home by direct rail route.

Dr. J. M. Mayhew and Dr. Arthur L. Smith, Lincoln, who have been associated in the practice of medicine for some years, have dissolved the relationship heretofore existing.

Dr. Miles J. Breuer, Lincoln, read a paper before the American Congress on Internal Medicine at Washington, March 13, on "Pulmonary Exercise in the Treatment of Tuberculosis."

Several Nebraska physicians, among them, Drs. J. H. Vance, J. A. Henske and H. B. Lemere, Omaha, are scheduled to take the Interstate Postgraduate Clinic Tour to Canada, the British Isles and Paris early this summer.

Considerable furor has been caused in the western part of the state by the death on the operating table of a young man, 22, undergoing an operation for removal of the tonsils. County attorney, post mortem and Ku Klux seem to figure in the case.

Dr. G. W. Fegers, Nebraska City, intends visiting the principal clincs of Europe to study surgery early this summer. He intends joining the Inter-State Post Graduate Assembly Clinic Tour which leaves Chicago, May 17, and visits the principal Canadian cities, those of the British Isles and ends at Paris.

NECROLOGY

William T. Carson, Hastings, Nebr., Iowa University College of Medicine, 1889; practicing physician at Holstein twenty-eight years and for the last five years at Hastings; died at the latter place, February 5th, after an illness of two years, aged about fifty-six years.

G. W. Collins, Pawnee City; pioneer physician and one of the first settlers of Pawnee county; member of the state legislature and speaker of the house of representatives, second session, 1871; died March 9th at the age of 88.

THE FIRST MEDICAL JOURNALS

In an article written by Leartus Connor, M. D., and printed in the Journal of the American Medical Association, June 14, 1884, it is stated that the first medical journal published was issued at Paris, France, in 1679. It was edited by Nicholas de Blegny, "who seems to have been 'a good bit of a charlatan'." The first medical journal printed in the United States was in the nature of a translation of the Journal de Medicine Militaire issued in Paris from 1782-88. This appeared in New York about 1700.

The first strictly American medical journal, according to Connor, was The Medical Repository, a quarterly, edited by S. L. Mitchell, Edward Miller and E. H. Smith, and published in New York, 1797-1824. The Philadelphia Medical Museum, the second American journal, came into existence in 1804 and retired from the field after a career of seven years. This was edited by Dr. —. —. Coxe. Baltimore was the home of the third medical journal of the United States, the Baltimore Medical and Physical Recorder, 1808-09. Dr. Tobias Watkins was its editor. Medical journalism in Boston began with the New England Journal of Medicine and Surgery, 1812-27. This was a quarterly and in 1828 was consolidated with the Boston Medical Intelligencer. This combination established the Boston Medical and Surgical Journal, which is still in existence and is now published by the Massachusetts Medical Society under the editorship of Dr. W. P. Bowers.

—A. M. A. Bulletin.

ANNUAL MEETING, LINCOLN, MAY 12, 13, 14

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, May, 1925 No. 5

CONTENTS

Page
Pathologic Physiology of the Spleen, Michael G. Wohl, M. D. 153
Modern Aspects of Nutrition. 3. Food Deficiencies as Factors in Limiting Growth—Continued, Victor E. Levine, M. A., Ph. D. 156
The Keilland Forceps, Chas. F. Moon, M. D. 163
Radium in Gynecology, Chas. E. Sayre, M. D. 168
Pneumococcus Peritonitis, Frederick G. Kolouch, M. D. 174
Pernicious Anemia, G. I. McCrea, M. D. 176
Other Causes of Glaucoma, D. D. Sanderson, M. D. 177
A Blood-Nitrogen Method for the Practitioner, Miles J. Breuer, M. A., M. D., F. A. C. P. 178
The Etiology and Prevention of Scarlet Fever, John D. Reid, B. Sc., M. D. 179
Page
A Case of Fracture of the Pelvis, H. Winnett Orr, M. D., F. A. C. S. 181

EDITORIALS—

Lincoln, May 12, 13, 14 182
Pertinent Questions 182
The Defense Fund Needs 183
The Nebraska State Medical Association Meetings 184
The Atlantic City Meeting 185
Hiring Community Doctor 185
Editorial Paragraphs 185
Programme Nebraska State Medical Association Meeting 186
Second Annual Meeting of the Nebraska Association of Medical Women, May 12, 1925 188
The Societies 188
Human Interest Tales 190
Necrology 191

PATHOLOGIC PHYSIOLOGY OF THE SPLEEN*

Michael G. Wohl, M. D., Omaha, Nebr.

The spleen is an organ that possesses both mysticism and romance. A great many facts have been learned about the spleen; a still greater number are of speculative nature, and a great deal more awaits discovery. While the latter presents the mystic side of the discussion, I assure you that a consideration of the former two constitutes a true romantic chapter in medicine.

The spleen is deeply placed in the abdominal cavity, under the 9th, 10th and 11th ribs; is almost entirely covered by peritoneum. Because of the location of this organ it cannot be palpated unless it reaches twice its normal size. Because of this fact, we are in the dark as to the early clinical and pathological picture of diseases that are commonly associated with splenomegaly, such as splenic anemia, Banti's disease, hemolytic jaundice, or pernicious anemia, if you please.

The spleen is an important link in that chain of a system which is of supreme interest in the human and animal body—that is, the reticulo-endothelial system of Aschoff. The spleen is the prinicpal organ of this system and as such plays a vital role not only in metabolism and blood formation, but as well in the production of immunity. The spleen is the one organ of this system which is most unstable. It rarely undergoes pathological changes that primarily arise within the organ, but very frequently shows lesions that result from disturbances in other organs.

Is the spleen necessary to life? We know that congenitally the organ may be absent. Some six years ago I had the privilege of studying the morbid anatomy of an eight-months old infant, a patient of Dr. Newell Jones. This child in addition to an unusual cardiac anomaly, also showed the total absence of the spleen. However, the hemolymph nodes of Warthin as well as the glands in situ of the spleen showed the picture of the latter and in all probability has served the little patient in good stead. There are, true, rather unique individuals with congenital absence of the spleen who have known to live to advanced age without exhibiting the blood abnormalities traceable to lack of the spleen, yet the greater number show a lymph hyperplasia as well as marked changes in the entire reticulo-endothelial system. I know of two cases in whom a surgical removal of the spleen resulted in a general adenopathy of the superficial lymph nodes. Lee reports a most interesting case of a lad in whom at the age of fourteen a splenectomy was done for traumatic rupture. Fifteen years later Lee again opened the abdomen for intestinal obstruction, and in the course of the operation he found the entire small intestine studded with small tumors, two of which were excised and microscopically diagnosed as splenic tissue. Lee states that there were about three hundred of these small tumors, their aggregate being equal to a normal spleen.

---

*Read before Douglas County Medical Society, Jan. 13th, 1925.

To gain a clear conception of the known facts of the function of the spleen, we must review briefly the fundamental framework of the organ. The spleen, as you know, is surrounded by a capsule, which is lined by a single layer of endothelial cells. It also contains fibres of unstriped muscle tissue. I wish to emphasize the latter statement, because as you know, all the non-striated muscles of the body, for example, muscles of the intestine, bladder, uterus, ureter, etc., have the power of rhythmic contraction. If you take a small bit of intestine, for instance, and put it in Locke's solution, it will beat for hours. This power of contraction occurs in locations where the nodal cells of Keith are found, in association with the non-striped muscle fibres only. The presence of the same tissue in the spleen may explain the rhythmic contraction and expansion of the organ during digestion, and also may serve as an evidence of the primary relationship of the spleen to the digestive tract.

That the spleen is directly related to the small intestine can be readily seen from the well-established fact that splenic extracts powerfully excite intestinal peristasis.

From the capsule there are projections of trabeculae into the organ proper. These likewise consist of unstriped muscle and fibrous elastic tissue. This constitutes the skeleton of the spleen. The larger blood vessels are imbedded within the trabeculae. The spaces between them are filled with masses of cells and fine venous vessels. This presents the splenic pulp. The cells are of the lymphoid type and also of endothelial character. There are also observed large round cells possessing one or many nuclei. Frequently there is striking evidence of red blood cells, some of which are being engulfed by the large round cells above mentioned. Within these cells the reds are seen to break down and hematin is set loose, which may be found within the cells and free in the tissue that surrounds it. This histological detail may at first impression appear of little moment, yet as you will readily see, it serves as an indication that the spleen conserves the food values of broken down red corpuscles, forwarding the remanents to the liver, for elaboration into energy producing substances. Thus the spleen becomes a store house rather than a "graveyard" of the red blood cells, as is conventionally assumed. One portion of the broken down blood undergoes an intra-molecular change in the liver cells into bilirubin and passes out into the bile capillaries. The other portion, which is the iron containing part of the hematin, is utilized for the reformation of red blood cells. Thus the relationship between the spleen and the liver is vividly exemplified, a fact which clinically is so commonly observed, as for instance, the frequency of the association of cirrhosis of the liver with swelling of the spleen, the splenomegaly of Banti's with cirrhosis of the liver, etc. The association has been so close in cirrhosis that recently splenectomies have been advocated for cirrhosis of the liver with the purpose of removal of poisons sent directly to the liver as well as for the purpose of offering relief from vascular turgesence of the liver. The latter procedure, however, is too bold to be generally adopted.

That the spleen serves as a storehouse for iron is seen from the fact that following splenectomy there is a marked renal excretion of iron. In order to compensate for the iron loss following splenectomy there is a marked proliferation of the remaining reticulo-endothelial cells, such as the Kupfer cells of the liver, as well as the mesenteric lymph cells, etc.

Within the splenic pulp there are distinct nests of cells of somewhat grayish appearance that surround small arterioles, giving rise to the follicles or Malpighian structures of the spleen. The central arteriole sends out smaller branches (capillaries) into the splenic pulp. Thus the blood pours out freely, so to speak, into the splenic tissue. It is because of this unique circulatory arrangement that the blood may either send cellular substances directly to the spleen or pick out splenic substances and convey them through the splenic vein into the liver. The spleen, by virtue of its splenic pulp and its intimate contact with the blood stream, filters out mechanically bacteria and toxins of colloid nature that circulate in the blood stream, and sends them to the liver for destruction. Clinically support for this statement is seen in septic processes where the spleen may reach twice its normal size. In sub-acute bacterial endocarditis the spleen is generally enlarged. When the spleen fails to filter out the micro-organisms, as in typhoid fever, for instance, multiple or single abscesses containing these micro-organisms, may result. In protozoal infections such as malaria, syphilis, the organisms may hibernate in the spleen and cause a splenomegaly. Failure to cure malaria, or to obtain negative serological reactions in syphilis, are doubtless due to latent foci in the spleen.

That the spleen as part of the reticulo-endothelial system is mainly concerned in the manufacture of immune substances with which the body is furnished during infections has been abundantly proven. Some seven years ago Dr. Kugle and myself studied the question of the action of x-ray upon splenic tissue and immunity formation. We found that when our smaller animals have been subjected to heavy radiation over the splenic area they have been more sluggish in the production of antibodies, the hemolysins, than the control animals. The amount of antibody formation was likewise much decreased compared with the non-radiated animals. To illustrate, rabbits and guinea pigs treated with sheep cells produced a hemolysin which in a dilution of 1:1000 was sufficiently strong to destroy red cells. On the other hand, a lot of similar animals which were subjected to x-ray produced a hemolysin which was strong in dilutions of only 1:200 and the highest 1:400. Morris and Bullock in most careful experiments, have found that spleenless rats were more prone to contract rat plague, and having contracted it they showed less resistance to its ravages. Likewise spleenless rats were far less resistent to common infection than normal rats. Hence the conclusion must be drawn that the spleen in some way helps to protect animals against infection.

The relation of the spleen to blood formation has been known for a long time. In the foetus the spleen produces red cells, yet it loses this power at birth, but continues to produce white cells in adult life. In the lower animals as well as in the human foetus the blood picture bears every resemblance to that observed in primary anemia.

As someone has suggested, primary anemia is a reversion to the primitive embryonal blood formation. The fragmentation of the red cells is primarily brought about by the action of some toxin outside of the spleen, the spleen simply supplying the necessary substances to bring about its fragmentation.

From the above it will readily be seen that the spleen is an organ exposed to continual wear and tear. Indeed, the histological study of the latter offers proof for the early aging of the organ. It has been found that from the age of 30 on, the capsule in practically every spleen reveals considerable hyaline changes in its connective tissue. The nuclei of the fibro-blasts have disappeared and the fibrils become thickened and few. The blood vessels likewise undergo a gradual thickening, particularly of the media and intima, consisting of connective tissue and hyaline. This is rather remarkable—that a splenic blood vessel should undergo hyaline changes at such an early life.

The capillaries that permeate the Malpighian corpuscles become thickened and later hyaline so that at thirty-six years practically 50% of spleens show instead of one arteriole, a number of more or less thickened and tortuous vessels coursing through each Malpighian corpuscle.

The amount of lymphoid tissue falls steadily from birth; because of the gradual collapse of the tissue, however, there appears a gradual increase of pulp with increasing years. Because of these changes there must occur a decrease in the power of constructive metabolism, which factor contributes to the senescence of the organ. According to Child, anything that decreases the rate of metabolism such as decrease in permeability, increase in density, accumulation of relatively inactive substances, and so on, leads to senescence.

Blood picture that follows splenectomy. Pierce and Krumbhar, in exhaustive experimental studies, summarize the facts as follows:

1. An anemia of the reds and hemoglobin which tends to recover; the hemoglobin is reduced more than the red cells; the anemia is of secondary type. characterized by decrease of reds and hemoglobin. In human beings the blood picture is similar to that found in experimental work. In a case report by Myer in whom 26 counts were taken following splenectomy, the first taken six hours after, the last three months later, at this time the blood showed an improvement but still was below normal. The decrease in hemoglobin sets in a little later but is eventually more marked than the fall in the red cells, likewise with improvement the red cells increase more rapidly than does the hemoglobin. Recently Pfeiffer and Smyth have reported four cases of splenectomy in whom blood counts were made for periods varying from one and nine months to three years. In all of these there was a distinct anemia up to the third year. In connection with this it might be interesting to recall the work of Leake, who found a definite increase of reds and hemoglobin upon administration of extracts of spleen and bone narrow.

2. The leucocytes also rise, reaching 14,000 to 38,000 per c. mm., but gradually decline to normal. In Pfeiffer's cases they all returned to normal in a period of one year and eight months.

3. The red cells have a greater resistance to salt solution. There is also a lessened tendency to jaundice when hemolytic substances are introduced into the body. This is probably related to the resistance of the red blood cells.

Less frequently the marrow of long bones is transformed from yellow to red. The destruction of the red cells by endothelial cells of lymph nodes and liver is also less frequently observed.

The pathology of splenic diseases was illustrated by lantern slides.

MODERN ASPECTS OF NUTRITION

THE PATHOLOGY OF FAULTY NUTRITION

3. Food Deficiencies as Factors in Limiting Growth—Continued.

Victor E. Levine, M. A., Ph. D.,
Professor of Biological Chemistry and Nutrition, College of Medicine,
Creighton University, Omaha, Nebraska.

GROWTH CATALYZERS

There are a certain class of biologic substances that have the power to catalyze growth in micro-organisms, in individual animal cells, in tissues, and in plants. Thus far eight such substances have been reported in the literature: (1) bios; (2) trephones; (3) water-soluble B or anti-neuritic vitamin; (4) water-soluble C or anti-scorbutic vitamin; (5) fat-soluble A or anti-ophthalmic vitamin; (6) fat-soluble D or anti-rachitic vitamin; (7) fat-soluble E or reproductive vitamin; (8) dietary factor P-P.

BIOS

The growth catalyzer, bios, has recently received the special attention of investigators. The term, bios, has been coined by Wildiers(22), to indicate a substance or substances capable of affecting markedly the multiplication of yeast cells. The recent investigations of W. Lash Miller, of the University of Toronto, and of Eddy, of Columbia University, indicate that bios may be isolated in the form of a crystalline compound. We cannot call bios a vitamin, for it is better, according to McCollum, to reserve the latter term to indicate a food factor indispensable to mammals.

TREPHONES

One of the most interesting and extremely important discoveries in regard to growth catalysis has recently been made by Carrel and Ebeling(23). They have demonstrated the presence in embryonic tissue and in glandular and leukocytic extracts of adult animal tissue, of principles capable of increasing the rate of multiplication of fibroblasts and of epithelial cells. Leukocytes, by setting free in vivo the growth-promoting substance which they manufacture and which are contained in the aqueous extracts, can nourish connective tissue and epithelial cells. Carrel does not class these growth promotors as vitamins, but prefers to call them trephones, which in Greek signifies "I feed". The trephones, according to him, differ from hormones, which merely stimulate the cells to activity, by the fact that the former, manufactured by certain cells, are used as food principles in the building up of other cells. The growth-promoting properties of leukocytes are, no doubt, employed by the organism, as is fully their power of opposing bacteria and other foreign substances. The significance of trephones in the synthesis of protoplasm in the body under physiologic as well as pathologic conditions is, indeed, far-reaching. The use of special media containing serum, blood or tissue may be the indication of a strong need of particular bacteria for some catalytic agent.

VITAMINS

We have already mentioned the six vitamins known at present. To insure growth in the young and proper biologic maintenance in the adult, all of them are absolutely essential. In view of this fact the use of yeast as a growth-promoting substance is not founded on a scientific basis, for yeast contains two vitamins, water-soluble B and dietary factor P-P. In the continued absence of any of the vitamins except vitamin E, the weight fails to increase. It may remain stationary for some time, but will finally suffer decline. Failure in an infant or child to add proportionally to its weight and height in the absence of any other sign or symptom may be the first indication of the existence of a malnutritional state. A latent scurvy or rickets may merely manifest itself in failure to add to weight or height or both.

The reproductive vitamin E seems to be concerned with growth only in a special way. This food factor was discovered by Evans and Bishop(24). In its absence conception takes place but the fetus soon undergoes resorption. The existence of a reproductive vitamin has been, however, questioned by some investigators. Levine and Sohm (25) have observed fertility in rats grown on a food mixture free from vitamin E, upon the addition of small quantities of manganese sulphate to the diet. Daniels and Hutton(26) have added to milk, which by itself is unable to induce fertility, small amounts of manganese, fluorine, aluminum, and silicate. With milk thus reinforced they were able to raise several generations of rats.

With respect to the very recently discovered substance, which is probably a vitamin, it must be said that only a short while ago Dr. Joseph Goldberger and Dr. W. F. Tanner, of the United States Public Health Service, discovered the fact that pellagra may be prevented by a "dietary factor P-P," which is present in brewer's yeast, in fresh milk, and in fresh beef. By comparison of the diets of their patients with those used in treatments and experiments on other deficiency diseases, they were led to the conclusion that they were dealing with a hitherto unsuspected preventive factor at work, since none of the known vitamins or dietary factors could account in every case for their results. In our last paper we pointed out that Goldberger and his associates attributed pellagra to inferior protein intake. This new discovery goes to show that medical science is at present making such rapid progress, that what is considered the last word in one issue of a medical journal must be thrown into discard in the issue following.

That this new dietary principle may affect growth is to be expected, since pellagra is a disease characterized by profound pathological changes referable to the gastro-intestinal tract, to the skin, and to the nervous system. Pellagra may occur in the first few years of life. The gastro-intestinal upsets, which give rise to severe diarrhea, the degenerative changes in the nervous system, the loss in weight—these conditions surely are not conducive to normal growth in a child.

It is very likely that each vitamin has a specific function in the growth process. Vitamin B probably controls the metabolism of nerve and muscle. In its absence the bones also undergo pathological changes. In vitamin B deficiency the peripheral nerves are involved as well as nerves controlling the various viscera. Atrophic and degenerative changes in the nervous system may give rise to corresponding changes in muscles and organs under their control, with a consequent loss in function and in weight. The lack of vitamin B may give rise to many grave symptoms other than those of peripheral neuritis. The term used for the disease is a misnomen, for McCarrison(28) places strong emphasis upon the extent and severity of the gastro-intestinal lesions observed in this condition. The work of McCollum and his associates(29) show that the vitamin (anti-rachitic vitamin or fat-soluble D), which they have discovered a short time ago, is fundamentally involved in bone formation. The anti-scorbutic vitamin keeps the vascular system intact, for in its absence the capillaries become so weak that they easily rupture, giving rise to the widespread and typical hemorrhages of scurvy.

The growth-promoting properties of vitamins have received clinical application from many investigators. For want of space we shall cite only the work of Chick and Dalyell(30). They have recently worked with backward children twelve to thirty-one months of age, whose condition before treatment showed lack of development for many months due to a diet sufficient in calories but deficient in the anti-scorbutic factor and in milk fat. The addition of anti-scorbutic juices and fats containing vitamin A stimulated to a marked degree the growth and progress of these children. The results of Chick and Dalyell examplify the child's capacity for recovery when conditions resulting in nutritional deprivation are eliminated.

INORGANIC COMPONENTS

The growth process may be seriously interfered with by a deficiency in the mineral or inorganic components of the diet. Hart and McCollum(31) observed that swine, restricted to corn meal and corn gluten, showed little or no growth, but began to make growth upon addition to the food of such salts as to make the ash content of the vitamin similar to that of milk. McCollum, Simmonds and Pitz(32) claim that the retardation or suspension of general growth of the young, as a result of defective inorganic content in the dietary, may be followed after the addition of the proper mixture of salts by prompt resumption of growth even at an accelerated rate, so that the normal weight for the age may be regained. According to Evvard, Dox and Guernsey(33), the addition of calcium chloride and calcium carbonate to a basal ration of corn and common salt in the case of pregnant swine resulted in greater size, more vigor, bigger bone formation, and better general condition of the new born pigs.

The inorganic elements thus far known to be requisite for growth are calcium, magnesium, sodium, potassium, iron, sulphur, phosphorus, chlorine and iodine. By far the greatest part of the sulphur ingested is not inorganic but in the form of protein and sulpholipin. Iron and iodine may come to us in organic combinations, although we are capable of utilizing for growth purposes inorganic iron or inorganic iodine. Besides the elements mentioned we find in the biologic organism, silicon in hair and nails, fluorine in bones, in teeth and in milk, and minute quantities of manganese, copper, zinc and aluminum. The functions of the last six biologic elements are not well known as yet. That some of them have a definite relation to growth is quite evident, for Levine and Sohm have observed that minute amounts of manganese salts increase the rate of growth, and Bertrand and Benzon(34) in France have made similar observations with reference to zinc. Very recently McCollum, Simmonds and Becker(35) have studied the effects of fluorine on the quality of the teeth. The fact that the diet to yield biologic efficiency must be adequate with respect to all the known food components is illustrated by the experiments of Miller(36), who demonstrated that a reduction in potassium greatly retards the process of growth. If the deficiency in potassium continues for a long period, death ultimately results.

From an analysis of the diet of the human being it seems that the inorganic elements most likely to be deficient are calcium, phosphorus, iron and iodine. We shall now focus our attention upon these.

CALCIUM

Calcium is found in every cell, in all solid and fluid tissues of the body. Bone, muscle, internal organs, and blood carry a certain amount of the element. The important biologic functions of calcium are, indeed, numerous. It plays a definite part in the coagulation of the fibrinogen of blood and of the caseinogen of milk. It has to do with the regulation of muscle work. The sodium, potassium, and calcium of blood serum control the activity of all types of muscle. It is the proper balance between the two opposing phases, relaxation and contraction, that makes for normal function. The heart muscle is bathed with blood serum, which contains salts of sodium, potassium and calcium. The salts of the first two are concerned in the relaxing phase, while the salts of calcium regulate the contracting phase. A physiological saline solution, like that of Ringer, Ringer-Locke or Tyrode is a salt solution containing the salts of sodium, potassium and calcium in the proportions contained in the blood.

Calcium is also concerned in the regulation of the activities of the nervous system. A decrease in blood calcium leads to nervous instability. Animals and children brought up on foods low in calcium are very apt to show a marked nervous imbalance. A decrease in the calcium content of the blood is one of the most characteristic and diagnostic features of tetany and conditions termed spasmophilia. Parathyroidectomy leads to tetany because of the influence the parathyroid has on the calcium of the blood. Administration of calcium salts may bring about the disappearance of typical manifestations of tetany or spasmophilia.

Calcium is necessary for the normal process of calcification. It is the chief inorganic component of bone, for the osseous system holds 99 per cent of the total calcium of the body. In pregnancy and in lactation there is an unusual need of lime for the growth of the fetus and for the production of the lime-bearing milk of the mother.

Calcium is also required for the pathological process of calcification. The latter is a protective measure of the organism, to wall off an area invaded by parasites. This walling off takes place in the formation of the tubercle, as in pulmonary tuberculosis, and in the enclosing of muscle areas, as in trichinosis. The laying down of calcium in the valves of the heart injured by bacterial colonization, in the arteries, as in arteriosclerosis, and in joint areas with much pathology, giving rise to fixation or ankylosis, although originally intended for repair and protection, finally leads, however, to more or less injury to the system as a result of partial or complete loss of function.

Meyer(37) of Vienna in 1920 gathered statistics regarding the military fitness of young men from different regions of Europe, considered in relation to the quality of water supplied at their homes. His data indicates a smaller incidence of decayed teeth and a larger proportion of persons with healthy teeth in areas where harder potable waters are used. He found, in general, that the per cent of young men fit for service in the armies was larger in calcium regions than in those in which other geological formations prevail. He also cites specific instances of deterioration in the quality of the recruits at Gotha after the city changed its supply of drinking water from hard to soft water. It seems hardly credible to attribute the good health observed by Meyer in certain regions to the hard water alone. We know that the ash of plants varies with the composition of the soil. A region having hard water carries soil rich in such elements as calcium, magnesium and iron. The farm products in these districts are liable to have a richer ash and the animals feeding on such products are liable to be more adequately fed. The more nutritious plant and animal food of such regions would greatly add to the health of the human being. In the light of these facts we may explain, at least partially, the better health of Nebraska in comparison to some of our other states.

PHOSPHORUS

The inorganic portion of bone contains 85 per cent tricalcium phosphate, 10 per cent calcium, 0.3 per cent calcium fluoride and 0.2 per cent calcium chloride. Since by far the greater portion of calcium is found as calcium phosphate, it follows that bone cannot be produced unless there is on hand a sufficient supply of phosphorous in the form of phosphate. An inadequate amount of calcium or of phosphorus in the food during growth retards development and calcification of bone. Bones formed in the young animal kept on a phosphorus-poor diet are soft, spongy and weak. Hart, McCollum and Fuller(38) fed young pigs a diet poor in phosphorus. They continued to grow for some time, but finally developed the bone defects mentioned. Since nervous stability is conditioned by a proper balance in the calcium and phosphorus intake, it is not surprising to learn that these experimental animals developed weakness of the legs, stupor and a more or less comatose condition, accompanied by twitching of the muscles, dragging of the hind quarters, and ultimate loss of function with final collapse. These effects were prevented by the simple addition of calcium phosphate.

The typical blood picture in rickets shows a low phosphorus. Rickets is a disease in which any of the following are factors: (1) a high calcium and low phosphorus diet or (2) a low calcium and high phosphorus diet complicated by a deficiency in anti-rachitic vitamin (fat-soluble D) or by a deficiency in the ultra-violet rays (sunlight). Either sunlight or cod-liver oil, rich in vitamin D, has the power to raise the phosphorus content of the blood. With the increase in phosphorus, more calcium can form calcium phosphate for bone building. The normal calcium content of blood is about 9 to 11 milligrams, and that of phosphorus about 5 milligrams per 100 c. c. in infants and children, and about 3.7 milligrams in adults. According to Howland and Kramer(39), of Johns Hopkins, when the figure for calcium multiplied by that for phosphorus is below 40, a diagnosis of rickets is made. In the case of bone fracture, a low factor for calcium and phosphorus will indicate non-union. In rickets or in non-union a diet is instituted rich in phosphorus or calcium and supported by vitamin therapy (codliver oil) and irradiation by sunlight or ultraviolet rays in order to increase the phosphorus and calcium above the pathological figure. Such treatment has yielded good results at the Johns Hopkins hospital.

IODINE

It has recently been brought emphatically to our attention that the water, plant and animal food of inland regions are relatively poor in iodine, while the same substances in or near the sea contain iodine sufficient for biologic purposes. The iodine ingested finds its way into the thyroid of the human being. This whole gland contains about ten to fifteen milligrams of this element. Kendall(40) isolated the iodine-bearing hormone and named it thyroxin, a compound resembling tryptophan and containing 65 per cent iodine.

Insufficient iodine in the food results in marked disturbances in the thyroid gland. Wild fish have no goiter, but when reared artificially begin to suffer from hyperplasia and enlargement of the thyroid. This fact has been demonstrated with salmon and with trout. Marine and Lenhart(41) and others have observed retrogression of the thyroid and return to normal, when the water in which fish are reared is treated with potassium iodide, or when they are fed with hashed sea-fish. McCollum states that in the Yellowstone river valley there has occurred for some time, as the result of thyroid disease, a yearly loss of about one million young pigs and a large number of lambs, calves and colts. Because of the iodine shortage the pigs were born in a hairless condition and with great enlargement of the thyroid. Many of them were born dead, while others died within one to thirty-six hours after birth. Smith(42) made a study of this serious loss in live stock and demonstrated that the administration of sodium or potassium iodide to pregnant sows resulted in litters normal in all respects. With reference to rats, it has also been very recently demonstrated that deprivation of iodine brings about hyperplasia and enlargement of the thyroid.

In relation to human beings, Marine and Kimball(43) demonstrated in 1917 as a result of an extensive experiment on the school children of Akron, Ohio, the value of iodine in the treatment and prevention of goiter. After two and a half years of observation they found that only 5 goiters developed in 2190 pupils given a grain of iodine over a period of ten days twice a year, while 495 goiters developed in 7320 pupils not given iodine. Klinger of Zurich reported a similar experience. He was able to reduce the goiter incidence in 100 children from 90 per cent to 20 per cent in fifteen months by the weekly administration of ten to fifteen milligrams of iodine. He also observed that the thyroid enlargement in both the fetus and the pregnant mother can be prevented by the means of two grams of sodium iodide given in the first half of the pregnancy. We shall have more to say about iodine when we take up the relation between faulty food and the incidence of diseases of the endocrines. But before leaving the subject we will enter into a very brief discussion of cretinism, a pathological condition in which the growth process seems inhibited.

Cretinism appears sporadically or endemically. In the sporadic form there is complete fibrous atrophy or total absence of the thyroid. The congenital cases are rarely recognized before six or seven months. The child does not grow so rapidly and is not so bright mentally. The hair is thin and the skin dry; the abdomen, swollen; the legs, thick and short. As in rickets, dentition is delayed and the fontanelles remain open. Of greater interest to us is endemic cretinism. It occurs most often wherever goiter is prevalent, in Switzerland, Savoy, Tyrol and the Pyrenees. The marked characteristics of this type of cretinism are three: (1) goiter, (2) stunted growth, (3) feeble-mindedness. Thus we see how lack of iodine, as observed in the case of cretins and in the animals of the Yellowstone river valley born with goiters and unable to maintain existence may be a limiting factor in the growth process.

The influence of diet on the glands of internal secretion is remarkable. Many of them, under conditions of unbalanced diet undergo hypertrophy or atrophy, with a resulting inability to influence in a normal way physiological processes. Disturbances in the functions of the pituitary gland result in characteristic aberrations of growth. Hyperpituitarism may lead to gigantism, when the process antedates ossification of the epiphyses; to acromegaly, when it is of later date. Hypopituitarism, when the condition originates in childhood, may give the typical picture of Frohlich's syndrome—adiposity with skeletal and sexual infantilism. When hypofunction of this particular organ originates in the adult, the sexual glands degenerate and function feebly or not at all, the body is large and fat, and there is a scarcity of growth of hair. Hypofunction of the thyroid, of the pineal gland or of the sex glands also leads to growth pathology. A diet improperly constituted attacks the integrity of the endocrines, with a consequent change in energy metabolism and in intensity of the growth process. We shall discuss at some other time the atrophy or hypertrophy of the hormone-producing glands following in the wake of faulty nutrition.

IRON

Iron is another inorganic element which is an important factor in growth. We are accustomed to think of iron in relation to the oxygen-bearing power of hemoglobin, and we generally overlook its other important functions. The amount of iron in the entire body of an adult is said to be about three grams, that is barely one-tenth of an ounce. Most of it is found in the hemoglobin of the blood, although liver, spleen and muscle contain a considerable amount. In very minute quantities iron is widely distributed, for it is found in the nucleus of almost all cells. It is not unlikely that it plays a very important role in nuclear metabolism. Iron is also found associated with chlorophyl, although the element in chemical union with this plant pigment is magnesium.

Our knowledge of iron in reference to hemoglobin production and to growth we owe largely to Von Bunge(44). He analysed the ash of the milk of various species and was surprised, in view of the fact that milk is the sole food in the early days of life, to find only small quantities of iron in it. Comparing the inorganic content of milk with that of new-born animals of the same species, he found that iron was six times as abundant in the ash of the young animal as that of the milk upon which it was nourished. That the new-born carries a reserve of iron has been ascertained by analysis of infants and children, puppies, kittens, and rabbits. Guinea pigs, however, feed on green leaves or other iron-rich foods from the first days of life and do not require any reserve. They are, therefore, born without any extra store of iron.

The per cent of iron in animals with a reserve supply is highest at birth. The human body at the beginning of extra-uterine life has three times as much as at maturity. During the sucking period the quantity of iron in the body remains constant or may diminish. The slight losses due to wear and tear are made good by the very minute quantities in the milk. When a little over one year old, the weight of the child becomes about three times as much as it was at birth. From this time on care should be taken to provide more iron in order to keep pace with a constantly increasing weight and a constantly increasing blood supply. Children kept on a milk diet as the sole article of food, after the weaning period has arrived, are not only apt to develop typical symptoms of chlorosis or of anemia, but they may also suffer a retardation of growth.

That iron is concerned in growth is illustrated by animal experimentation. Young animals, kept on an exclusive milk diet, make very slight gains in growth or none at all. On the addition of iron to the milk, growth is markedly accelerated despite the fact that the iron is not utilized for building hemoglobin. The addition of iron to a diet already adequate with respect to this element exerts no influence whatever on the rate of growth. Iron subserves other important functions in the body besides that connected with the formation and with the biological activities of hemoglobin. Biologic compounds containing iron induce reactions characteristic of the oxidizing enzymes and of catalase.

From the standpoint of artificial feeding the question of iron deserves much more consideration than it is really getting. Human milk contains 1.12 to 1.19 milligrams of iron per liter, while cow's milk contains 0.21 to 0.49 milligram per liter. The latter, therefore, contains one-half to one-fifth as much iron as human milk. It follows that an infant on cows' milk must consume two to five times as much undiluted milk in order to receive the same amount of iron as from the mother's milk. Such quantities of milk cannot be attempted with safety in early infancy. It is, therefore, to be expected that during the first months of life the artifically fed infant will consume its surplus store of iron more rapidly than one of the same age fed on the milk of a healthy mother. Iron deficiency brings with it a host of symptoms —retardation of growth, anemia, loss of appetite, gastro-intestinal derangement, restlessness and general irritability. Thus far pediatricians in reference to artificial feeding have centered their attention upon calories, fat, carbohydrate, protein and one vitamin, the anti-scorbutic C. No diet can lead to perfect health unless it is adequate in all respects. No wonder that the results obtained with artificial feeding are very often disappointing. It is very remarkable that manufacturers of chicken feed, of hog and cattle feed have availed themselves of all the late findings in nutrition, while the pediatrician is still engaged in doling out so many ounces of milk, so many ounces of water, and so many tablespoonfuls of lactose or dextromaltose.

GROWTH AND HEREDITY

We have attempted to enumerate the factors influencing growth. It would be of great interest to us from an anthropological standpoint to find a relation between nutrition and such racial characteristics as height and weight. McCollum's history of his rat families show decisively the profound influence of nutrition upon size. Animals subjected to conditions of malnutrition showed a diminution in size from generation to generation. Turning to the human race we find considerable evidence as to the effect of diet on physique. Orientals as a rule, live on a diet, which is at best second rate. Their appearance betrays this fact. That diet is the controlling factor may be concluded from a study of the people from the various parts of China and of India. The health, vigor and appearance of the people in the various parts of these countries differ markedly. Those of the north of China are fine specimens of physical development. They live on a diet which, from the standpoint of modern nutrition, is fairly adequate. In the south of China, the diet is defective in several ways, and consists to a great extent of polished rice. The Chinese in the south are smaller in stature than those of the north. McKay(45) and also McCarrison(46) have described the physical condition of the natives of different parts of India and have made similar interesting correlations with the character of their diets.

In our own country we find interesting illustrations of correlations between food and physique. Japanese children born in California and fed upon the products of its farms, increase promptly in size over that characteristic of children of the same age in Japan. The difference also in the appearance of Jewish boys and girls, born in this country under better economic conditions than those of their parents, who sought to escape from a life of deprivation in Russia or in Poland, attests to the influence of nutrition and subtract from the potency of heredity as a factor in the physical appearance of races. The size developed by a species is determined by heredity. The weight and stature, however, to which an individual may actually attain within this definitely fixed limit, is to be directly traced to the quality of feeding during his period of growth.

In the next paper we shall take up the relation of faulty food to disturbances in the processes concerned in metabolism.

BIBLIOGRAPHY

1. McCollum, E. V. The Newer Knowledge of Nutrition, MacMillian, New York, 1922.
2. McDonald, J. F. Private communication.
3. Delpech. Le scorbut pendant le siege de Paris. Ann. d'hy pubi. et med leg. 11 Ser, Janvier 35, 1871.
4. Bucquoy. Union Med. Sept. Oct., 1871.
5. Scherer. Ueber Skorbut in Deutsch Sudwestafrika. Arch. f. Schiffs-u Tropenhyg. 1913, 17, 191.
6. Fleming, Macauley and Clark. Report on the prevalence and prevention of scurvy and pneumonia in Southern Rhodesia among native laborers, 1910.
7. Darling. The pathological affinities of beriberi and scurvy. Journal of the American Medical Association 1914, 63, 1290.
8. Greig. Note on an investigation on the causation of epidemic scurvy in Calcutta, Trans. Soc. Trop.. Med. Hyg. 1912, 5, 106.
9. Goldberger. Public Health Reports, 1914, 20, 1683; 1915, 30, 3117, 3338; 1918, 33, 481; New York Medical Journal 1918, 107, 1146; Journal of the American Medical Association 1922, 78, 1678.
Goldberger and Wheeler. Public Health Reports, 1915, 30, 3.
Goldberger, Wheeler and Sydenstricker. Journal of the American Medical Association, 1918, 71, 944.
Goldberger and Tanner. Public Health Reports. March 1922, 732.
10. McGowan and Anchton. Biochemical Journal 1924, 18, 265, 273.
11. Osborne and Mendel. Carnegie Publication, 1911, 156; Journal of Biological Chemistry, 12, 473; 13, 233; 17, 325; 18, 1; 20, 121; 22, 241; 25, 1; 26, 293; 34, 521; 41, 275; 44, 1.
12. Ackroyd and Hopkins. Biochemical Journal, 1916, 10, 551.
13. Sure, B. Journal of Biological Chemistry, 1924, 59, 577.
14. Thomas. Archiv fur Physiologie, 1920, 219.
15. Hinhede. Skandinavisches Archiv fur Physiologie, 1914, 31, 259.
16. Sherman. Journal of Biological Chemistry, 1920, 41, 97.
17. Boyd. Royal Society of Medicine, Section on Therapeutics and Pharmacy, Nov. 1919; Lencet 1919, 2, 979.
18. Wilson. Citation from Report 38, Medical Research Committee, London 1919, p. 95.
19. Chick and Hume. Biochemical Journal, 1920, 14, 135.
20. Vedder. Third Report, Thompson Pellagra Commission.
21. Roberts. Journal of the American Medical Association 1920, 75, 21.

22. Wildiers, E. La Cellule, 1901, XVIII, 313.
23. Carrel, A. Leukocytic Trephones. Journal of the American Medical Association, 1924, 82, 255.
24. Evans and Bishop. Journal of the American Medical Association 1923, 81, 889; Journal of Metabolic Research 1923, 13, 233.
25. Levine, V. E., and Sohm, H. M. Journal of Biological Chemistry, 1924, 59, XLVIII.
26. Daniels and Hutton. Journal of Biological Chemistry, 1925, 62, 143.
27. Goldberger and Tanner. Science, Supplement 1925, 61, XIV.
28. McCarrison. Studies in Deficiency Disease. Journal of the American Medical Association, 1922, 78, 1.
29. McCollum, Simmonds, Becker and Shipley. Journal of Biological Chemistry 1922, 53, 293.
30. Chick and Dalyell. British Medical Journal 1922, 11, 1061.
31. Hart and McCollum. Journal of Biological Chemistry, 1914, 19, 373.
32. McCollum, Simmonds and Pitz. Journal of Biological Chemistry 1916, 25, 105; 27, 33; 28, 153, 211, 483; 1917, 29, 341, 521; 30, 13.
33. Evvard, Dox and Guernsey. American Journal of Physiology, 1914, 34, 312.
34. Bertrand and Benzon. Annales de l'institut Pasteur, 1924, 28, 405.
35. McCollum, Simmonds and Becker. The effect of additions of fluorine to the diet of the rat on the quality of the teeth. Meeting of the American Chemical Society, Division of Biological Chemistry, Baltimore, April 7, 1925.
36. Miller, H. G. Journal of Biological Chemistry, 1923, 55, 61.
37. Meyer, H. H. Zeitschrift fur Stomatologie, 1920, 13, No. 11.
38. Hart, McCollum and Fuller. American Journal of Physiology 1908-9, 23, 246.
39. Howland and Kramer. Monatschr. Kinderheilk, 1923, XXV, 279.
40. Kendall. Journal of the American Medical Association, 1915, 64, 2043.
41. Marine and Lenhart. Bulletin No. 7, Department of Fisheries, Commonwealth of Pennsylvania, 1910; Johns Hopkins Hospital Bulletin, 1910, XXI, 95.
42. Smith. Journal of Biological Chemistry, 1918, 33, 313.
43. Marine and Kimball. Journal of Laboratory and Clinical Medicine, 1917, 111, 3.
Kimball and Marine. The Archives of Internal Medicine, 1918, 22, 41.
44. Von Bunge. Physiological and Pathological Chemistry, translated by Starling 1902, Chapter 25.
45. McKay. The protein element in nutrition. London, 1912.
46. McCarrison. Journal of the Royal Society of Arts. London, Jan. 2, 1925.

THE KEILLAND FORCEPS

Chas. F. Moon, M. D., Omaha, Nebr.

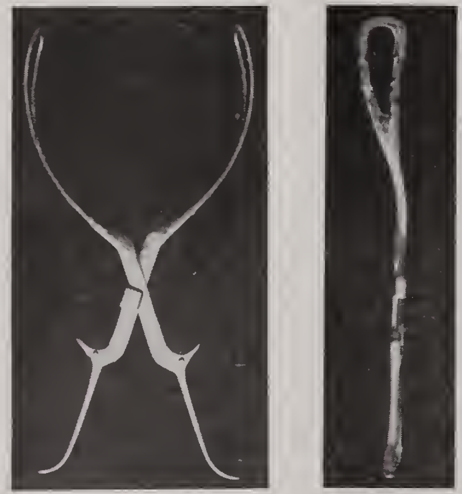
The obstetric forceps is an instrument designed for the purpose of extracting the fetus by the head through the maternal passages. A properly designed forceps serves this one purpose without injury to the fetus or to the mother. Whenever the right of either is enroached upon the instrument ceases to be the true forceps of obstetrics and becomes merely an instrument of extraction.

We must then in the first analysis see whether the Keilland forceps fits into the above definition. In Europe, where they have had a large experience with it, the concensus of opinion agrees that this is so. The Keilland forceps seems to meet these requirements in a more marked degree than any other type.

The history of the development of the obstetrical forceps from the time of its invention by Peter Chamberlain in 1580 and its presentation to the medical world by Vischer and Vander Poll in 1753 down through the various modifications and additions to the Simpson or Vienna school forceps and the Tarnier axis-traction (1877) is very interesting but cannot be developed thoroughly in an article of this kind. The Keilland forceps was invented by Keilland of Christiana in 1912 and taken to Austria and Germany in 1915 by Keilland in person and there demonstrated at the various clinics. It was especially well received at Munich where the Doderlein Clinic gave it a great deal of favorable publication. The Keilland forceps fill a long felt want and before its invention there was only the Tarnier axis-traction forceps to do the work. G. C. Hirst(1), in his paper "The case against the axis-traction forceps" says:

"The Tarnier, is probably that in most common use, unfortunately. This instrument has a cephalic curve that is positively murderous and the harder the pull the greater the force of compression, the traction rods more often than not seriously injure the perineum long before the head is on the pelvic floor." He also mentions the long list of injuries to both mother and child due to the use of the axis-traction forceps. These are mainly pressure and friction types of injury. He mentions also the tendency of the unprotected blade ends to cut furrows in the vagina. Undoubtedly there are permanent mental disturbances and paralysis secondary to non-fatal skull fractures and intracranial hemorrhage.

The forceps consists of two blades, right and left as we name the blades of the old fashioned forceps. In other words we hold the forceps with the lock up and designate the blades according to the side of the mother's pelvis in which they lie when applied in a low forceps application. We may also designate the blades upper and lower when they are applied in the antero-posterior diameter of the pelvis. Each blade of the forceps has a handle and a hook-like projection. The blades are longer and slimmer than those of the usual obstetric forceps and are fenestrated. The blades are curved on the flat to fit the head (the cephalic curve) but have no pelvic curve. The blades fit together by a sliding lock which gives them several advantages. The length of the blades is an obvious advantage in making a midplane application and due to the slimness of the blade they take up a very small amount of room in the pelvis.



Keilland Forceps

The cephalic curve of the blades is designed to fit accurately over the bi-parietal diameter of the child's head and due to this close fitting, there is no tendency to slip and it is impossible for the head to rotate in the forceps. Another advantage of the close fitting of the forceps is that the vaginal mucous membrane does not move with the head when rotation takes place. Further, because of the accurate fit the ends of the blades are not unprotected and so cannot cut furrows in the vagina, which is frequently the case when the old type forceps is used as a rotation instrument.

Due to the fact of the pelvic curve we never have to compromise between an ideal pelvic and ideal head application with this forceps. It is possible to apply the Keilland forceps on the bi-parietal diameter of the child's head when it is unrotated, or in other words when the sagital suture is transverse. Therefore, in these cases we make our application in the antero-posterior diameter of the pelvis in the true conjugate or at right angles to the ordinary forceps application and this makes the entire procedure much simpler.

The sliding lock is a distinct advantage in those cases of asynclitism as either an anterior or posterior parietal bone presentation, as it allows a perfect head application at this time, and, since the blades may move on each other, allows the handles to approximate when the asynclitism is corrected as the head descends in the pelvis. This particular type of sliding lock allows a wide opening of the blades without the danger of their becoming unlocked.

One general rule for the Keilland forceps is that the application is always made with the leading point toward the lock. The forceps may be applied to the head in the usual low forceps application, low transverse arrest, mid-plane, inlet application, also called high forceps application to the floating head, although this last is rarely advisable. In low forceps application it is usual practice to apply the forceps by insertion of the blades into the sides of the vagina as one would make a pelvic application of the Simpson forceps. For mid forceps or high forceps there are three standard methods of inserting the blades.

First: The upper blade is inserted into the hollow of the sacrum and wandered around to a position under the symphysis, the second blade is then inserted into the hollow of the sacrum and locked.

Second: The upper blade is inserted or slipped under the symphysis by depressing the handle as much as possible, the lower blade inserted into the hollow of the sacrum and the blade locked.

Third: In this procedure, the third method is to turn the upper blade upside down, inserted under the symphysis and turned over through an angle of 180° with the button leading. The second blade is then inserted into the hollow of the sacrum in front of or to one side of the promontory, in line with the upper blade and to the side of the first blade which will favor locking without crossing the blades. This is the method advocated by Keilland and most often recommended by writers on the subject and in spite of the description making it seem difficult it is in fact very easy. One might think there would be danger of rupture of the uterus by this method of inserting the upper blade but hundreds of tests have shown that this is not the fact and the explanation is that the rotation takes place in the lower uterine segment with the blunt and not the sharp edge of the forceps against the anterior wall and the button indicates this direction. When the blades are locked the forceps grasp the head in the bi-parietal and bi-zygomatic diameters and thus the face is not marked at all. The compression occurs in the direction in which the head stands compression better than it does in the fronto occipital diameter thus eliminating many cases of intracranial hemorrhage. What little lessening in the bi-parietal diameter there is makes for an easier passage through the true conjugate. With this manner of application of the forceps in the antero-posterior diameter of the pelvis there is also a sliding or shoe horn effect which facilitates delivery of the head under the symphysis. If one is careful to see that the bladder is empty before the application there is no danger of injury by catching it between the forceps and symphysis for it is either displaced upwards with the insertion of the anterior blade or pushed out of the way by the wandering blade in the primary insertion. The line of pull is at first downward in the line of the pelvic outlet and due to the lack of pelvic curve, it is the same as that of the axis-traction forceps. The amount of traction is surprisingly small, and many observers have described the method as that of leading the head through the canal rather than pulling it through.

People of the central countries became enthusiastic about the forceps soon after its demonstration by Keilland and today it is the only forceps used in many clinics. A great deal of literature has appeared in the German, Austrian, Swiss, French, and Italian publications and I find 96 articles written on the subject. Of these only one has appeared in English and this is the article of Greenhill(2) published in the Journal of Obstetrics and Gynecology for March 1924 in which he reviews the foreign literature, Williams(3) and De Lee(4) simply mention the forceps in the latest editions of their books. Thirty-six of the reviews are statistical and review the results of the use of the Keilland forceps in over 1800 cases.

Krull reports 93 cases with very good results and believes the Keilland forceps the ideal instrument for rotation and an extraction forceps, causing very little damage.

Hoffman(5) reports 116 cases and speaks of the forceps in glowing terms. He states that since its introduction into the Dortmund Clinic no other has been used and also speaks of the ease with which a rotation of 135° is made with one application thus doing away with the Scanzoni maneuver. Meuman(6) of the Zweifel Clinic of Leipzig says they have discarded all other types of forceps but the Keilland, and Heidler(7) of the second Clinic of Vienna makes the same comment. Kuster(8), Riediger(9), Von Schubert(10) of the Franz Clinic and Carl Ruge(11) of the Bumm Clinic and many others speak very highly of the forceps. They do not claim absolutely perfect results but state they approach them more nearly than with any other type of instrument. A few men as Opitz(12), Fehling(13), Fink(14), and Schauta(15), speak against the forceps. Opitz feels that the old type forceps are good enough and states that he has had no experience with the Keilland. Fehling condemns the instrument and speaks of the Keilland as a three bladed forceps so he evidently had some other instrument in mind. Fink condemns the instrument because of two deaths in his clinic yet states that one of his cases died of eclampsia and admits that in the other case, the injury to the cervix was in a place where the head had caused necrosis by long continued pressure. In spite of these admissions he still attributes the deaths of these two cases to the Keilland forceps. Schauta condemns the forceps before he has had any experience with it and then only because he does not believe in the rotation of the anterior blade in the uterine cavity.

My own experience with the forceps has been the use and observation of its use in the second Clinic in Vienna. There it is the only forceps used and their experience with it had been very fully covered by the two reports of Heidler. His first report analyzed 100 cases. Of these, 79 were primiparas which included 13 over 35 years of age. In 53 cases the head was high and in 13 was barely engaged. In 67 of the 100 cases the anterior blade was rotated in utero. He called attention to the fact that no force should be used to bring about rotation of the anterior blade and also warned against using the forceps where there is too high a degree of contraction of the pelvis or when the head is too high.

In this Clinic they believe that the Keilland instrument is a definite advance in operative obstetrics and it is considered to be a universal instrument. I witnessed, assisted or applied the forceps in 17 cases while a hospitant in this hospital, and was fortunate in seeing uniformly good results without injury to either mother or child.

I firmly believe that the Keilland forceps is a distinct advance in obstetric practice and that when the old sane rules of forceps application are applied to their use and deliveries through contracted pelvis or application to floating heads are not attempted they will take their rightful place as a distinct aid in operative delivery.

It should be borne in mind that after all the Keilland forceps is only an obstetric forceps and is to be used only where forceps are indicated. They cannot take the place of caesarian section or podalic version. The essential points that must be present for any typical forceps operation are the same for the Keilland instrument as for any other forceps, namely proper proportion between the size of the pelvis and child's head, the external os dilated and the membranes ruptured and preferably the head engaged. The advantages are:

1. It is very easy to apply no matter what the location of the head in the pelvis and no matter what the direction of the sagitial suture.

2. There is no displacement of the head on insertion of the blades.

3. The head application is harmless and there is no pressure on orbit, nose, eyes, neck or facial nerve.

4. The blade will not slip.

5. There is no need to change the application of the forceps from beginning to end of delivery.

6. This is the only possible forceps that can be applied with true safety to a high face presentation.

7. Much less force is necessary with this forceps than with the old type since they take up no room, give a slide action under the symphysis and the normal mechanism of labor is not interfered with and the lines of pull as mechanically correct.

BIBLIOGRAPHY

4. De Lee, Obst. W. B. Saunders Co. 4th Ed. Page 1039.
Goenner (A) "Die Kiellandzange," Schweiz. Med. Wchnschr. Basel 1923. LIII 1057-1059.
2. Greenhill, J. B. "The Kielland Forceps". Amer. Jour. Obst. & Gun. Vol. II, No. 3, March. 1924.
Heim (K) "Erfahrungen mit den Kiellandzange" Zentralbl. f. gynik. Leips. 1924. XLVIII 506-515.
7. Heidler (H) "Weitere Erfahrungen mit der Kiellandzange." Zentralbl. f. Gynak Leipzi, 1923, XLVII, 1245, 1259.
Henkel (M) "Die Kiellandzange ein Universalininstrument fur die praktischen arzt?" Med Klin Berl. 1924, XX71-73.
1. Hirst, G. C. "The case against the axis traction forceps." Jour. A. M. A. Vol. 82, No. 4. P. 296.
Horn (O) "Ueber die Kiellandzange," Acta Gunecol. Scandin, Helsingfors 1923, 322-344 (Kielland forceps) Ugeskr. f. Lacger, 1923 LXXXXV906-911.
Riediger (K) "Entgegnung auf die arbeits Finks" Zur Kritikder Kiellandzange". Zentralbl. g. gynak Leipzig 1923 XLVII 1215-1219.
2. Williams Obs. D. Appleton & Co. 1923, 462.
Baumn: Arch. f. Gynak., 1922, cxvii, 136.
Benthin: Monatschr. f. Geburtsh u. Gynak., 1921, lv, 113.
Berecz: Orvoskepzes, 1921, xiv (Lups).
Bockelmann: Zentralbl. f. Gynak, 1923, xlvii, 59.
Bruch: Monatschr. f. Geburtsh. u. Gynak., 1922, lviii 265.
Doderlein: Monatschr. f. Geburtsh. u. Gynak., 1922 lvii, 283.
Eisenreich: Arch. f. Gynak., 1922 cxvii, 136.
12. Fehling: Diagnostiche und Therapeutische Irrtumer und Ihre Verhutung in der Geburt. Geo. Thieme, Leipzig, 1921, 37. 7
Idem: Zentralbl. f. Gynak., 1922 xlvi, 184.
14. Fink: Monatschr. f. Geburtsch. u. Gynak., 1921, lv, 113.
Idem: Zentralbl. f. Gynak., 1923, xlvii, 668.
Idem: Monatschr. f. Geburtsh., u. Gynak., 1923, lxiv, 115.
Fraenkel: Zentralbl. f. Gynak., 1919, xliii, 949.
Frey: Schweiz. med. Wchnschr., 1923, xiii, 332.
Guggisberg: Arch. f. Gynak., 1922, cxvii, 136.
Idem: Zentralbl. f. Gynak.. 1922, xlvi, 1926.
Halban: Zentralbl. f. Gynak., 1918, xlii, 16.
Idem: Monatschr. f. Geburtsh. u. Gynak., 1918, xlvii.
Hamm: Munchen, med. Wchnschr., 1917, lxiv, 1544.
Hammerschlag: Arch. f. Gynak., 1922, cxvii, 136.
7. Heidler: Arch. f. Gynak., 1923, cxviii, 334.
Idem: Zentralbl. f. Gynak., 1923, xlvii, 1245.
Hermstein: Monatschr. f. Geburtsh. u. Gynak., 1923, lxii, 139.
Hess: Ein Beitrag zur Kielland Zang, Dissertation, Konigsberg, 1922.
Hirschberg: Zentralbl. f. Gynak., 1923 xlvii, 875.
Hodiesne: Zentralbl.. f. Gynak., 1921, xlv, 623.

5. Hoffman: Fortschr. d. Med., 1921 xxxviii, 669.
Idem: Arch. f. Gynak., 1922, cxvii, 116.
Idem: Znetralbl. f. Gynak., 1922, xlvi, 786.
Kielland: Monatschr. f. Geburtsh. u. Gynak., 1916, xliii.
Idem: Erweiterter Sonderabdruck aus Monatschr. f. Geburtsh. u. Gynak., 1916, xliii. S. Karger, Berlin.
Idem: Zentralbl. f. Gynak., 1922, xlvi, 1856.
Idem: Monatschr. f. Geburtsh, u. Gynak., 1922, lvii, 283.
Klein: Zentralbl. f. Gynak., 1921, xlv, 621.
Kupferberg: Zentralbl. f. Gynak., 1922, xlvi, 183.
Krull: Arch. f. Gynak., cxxii, 110, 1922.
8. Kuster: Zentralbl. f. Gynak., 1919, xliii, 948.
Idem: Ztschr. f. Geburtsh. u. Gunak., 1919, lxxxii, 218.
Kustner: Zentralbl. f. Gynak., 1919, xliii, 949.
Loeser: Zentralbl. f. Gynak., 1921, xlv, 1868.
Lups: Uber die Kielland Zange, Inaugural Dissertation, Gegruder, Legrady, Budapest, 1922.
Mathes: Munchen. Wchnschr., 1922, lxix, 1913.
Mayer: Zentralbl. f. Gynak., 1921, xlv, 1557.
Idem: Monatschr. f. Geburtsh. u. Gynak., 1922, lvii, 138.
Idem: Arch. f. Gynak., 1922, cxvii, 136.
6. Meumann: Zentralbl. f. Gynak., 1921, xlv, 617.
Idem: Zentralbl. f. Gynak., 1922, xlvi, 335 and 1676.
Idem: Sentralbl. f. Gynak., 1923, xlvii, 197.
Mueller: Monatschr. f. Geburtsh. u. Gynak., 1922, lvii, 283.
13. Opitz: Zentralbl. f. Gynak., 1922, xlvi, 184.
Pankow: Arch. f. Gynak., 1922, cxvii, 136.
Puppel: Munchen, med. Wchnschr., 1921, lxviii, 91.
Idem: Arch. f. Gynak., 1922, cxvii, 136.
9. Reidiger: Monatschr. f. Geburtsh. u. Gynak., 1921, lv, 113.
Idem: Zentralbl. f. Gynak., 1923, xlvii, 1215.
Rosenfeld: Zentralbl. f. Gynak., 1918, xlii, 16.
Idem: Monatschr. f. Geburtsh, u. Gynak., 1918, xlvii.
Idem: Arch. f. Gynak., 1922, cxvii, 122.
11. Ruge II: Zentralbl. f. Gynak., 1922, xlvi, 1857.
Sachs: Zentralbl. f. Gynak., 1920, xliv, 1186.
Saenger: Monatscher. f. Geburtsh. u. Gynak., 1916, xliv, 231.
Idem: Arch. f. Gynak., 1922, cxvii, 136.
Idem: Monatschr. f. Geburtsh. u. Gynak., 1922, lvii, 283.
14. Schauta: Zentralbl. f. Gynak., 1918, xlii, 16.
Idem: Monatschr. f. Geburtsh. u. Gynak., 1918, xlvii.
Schroeder: R; Monatschr. f. Geburtsh, u. Gynak., 1921, lv, 113.
Schroder: E. Monatschr. f. Geburtsh, u. Gynak., 1923, lxiv, 116.
10. V. Schubert: Zentralbl. f. Gynak., 1922, xlvi, 1856.
Idem: Ztschr. f. Geburtsh. u. Gynak., 1923, lxxxv, 134.
Schweitzer: Zentralbl. f. Gynak., 1921, xlv, 623.
Sellheim: Arch. f. Gynak., 1922, cxii, 136.
Idem: Zentralbl. f. Gynak., 1922, xlvi, 1676.
Skutsch: Zentralbl. f. Gynak., 1922, xlvi, 721.
Spitzer: Sentralbl. f. Gynak., 1923, xlvii, 865.
Stiglbauer: Wien. clin. Wchnschr., 1922, 827.
Stoeckel: Lehrbuch der Geburtsh Gustav Fischer, Jen., 1920.
Stratz: Arch. f. Gynak., 1922, cxvii, 136.
Stroeder: Zentralbl. f. Gynak., 1919, xliii, 478.
Temesvary: Arch. f. Gynak., 1922, cxvii, 136.
Thies: Zentralbl. f. Gynak., 1922, xlvi, 722.
Weinzierl: Arch. f. Gynak., 1922, cxvii, 101.
Idem: Ztschr. f. Geburtsh. u. Gynak., 1923, lxxxvi, 221.
Williams: Obstetrics, D. Appleton and Co., 1923, 462.
Winter: Monatschr. f. Geburtsh. u. Gynak., 1923, lxiv, 114.
Zangemeister: Zentralbl. f. Gynak., 1922, xlvi, 1676.
Zimmermann: Arch. f. Gynak., 1922, cxvii, 136.
Idem: Munchen. Med. Wchnschr., 1922, lxxix, 700 and 1013.
Hiess: Zentralbl. f. Gynak., 1923, xlvii, 1807.
Gaussbauer: Zentralbl. f. Gynak., 1923, xlvii.

DISCUSSION

DR. C. W. POLLARD: I was asked to open the discussion of Dr. Moon's paper. He let me take a pair of the forceps to try and through our secretary I have quite a number of letters here, in answer to letters, as to the use of the forceps elsewhere.

The sliding lock make these forceps awkward for persons who have been used to the old kind, but in asynclitism it can be applied to the head and advance made to the soft parts.

I don't believe in rotation of the head much with forceps. You can rotate it with the hands if you have the head advanced far enough in the pelvis, if rotation is necessary.

The consensus of opinion, I believe, is that the forceps have a field, but to use them as a general forcep when we have the other forcep and are accustomed to them, is questionable. The field is limited. In cases of asynclitism and transverse arrest you will find these forceps of good service.

DR. MOON: (closing) I think I made it plain in my paper that I feel that the Keilland Forcep has only a place in operative delivery, but I believe that it does have a real place in operative delivery, even if limited, it will be a real help and the point Doctor Pollard brought out that the opposition to the Keilland forcep has been mainly from men who have had no experience or very little experience with the forceps is to me a point in their favor. The places in Europe where they have had large experience with these forceps they have discarded all other types, but I believe that is going too far and I believe in time they will use the Keilland for certain cases and switch back to the Simpson for other cases.

An Idaho man was fishing in Lake Crescent recently. He caught a big northern pike; the biggest he had ever landed in his long and busy life. He was elated. He was crazed with joy, and he telegraphed his wife: "I've got one; weighs seven pounds and it is a beauty."

The following was the answer he got: "So have I; weighs ten pounds. Not a beauty—looks like you. Come home."

RADIUM IN GYNECOLOGY

Chas. E. Sayre, M. D., Norfolk, Nebr.

Radium was isolated by M. and Madame Curie and their physicist M. Debierne in 1910. Madame Curie was given the credit of the discovery, but it is believed by physicists that more credit should go to M. Debierne.

There are now known to be more than thirty radio-active substances, being found in all ores containing uranium.

The principal supply has been the carnotite ores of Colorado and Utah. The extraction of radium from these carnotite ores is a very complicated process.

Approximately 500 tons of chemicals and 1000 tons of coal is used in the extraction of one gram of radium element, 15.4 grains.

In 1921 large deposits of ore, very rich in radium and easily worked was discovered in Katanga, in Belgian Congo. The ore is shipped to a plant near Antwerp where the radium is extracted.

There are three different kinds of radiations emitted by radio-active substances, alpha, beta and gamma rays. The alpha rays have a double positive charge and are shot out from the radium atom at the rate of ten to twelve thousand miles per second; the alpha rays are very destructive to tissues but fortunately are absorbed by the thinnest layer of metal or the glass tube in which the radium is contained. These rays are analagous to the canal rays of the Crookes tube.

According to Simpson(1) "a gram of radium in equilibrium with its decay products, Ra emination, RaA, B & C emits energy with its rays at the rate of 136 calories per hour. Of this energy 125 calories are born by the alpha rays, 4.5 calories by the beta rays and 6.5 by the gamma rays."

Beta rays are swiftly moving negatively charged electrons. Soft, medium and hard beta particles may be distinguished according to their velocity and power of penetration. The slowest beta rays are comparable to the alpha rays in penetrating power and are known as the soft beta rays. The fastest beta rays have about the velocity of light and have 100 times the penetrating power of the alpha rays. These are known as the hard beta rays and it is estimated that to give an electron this initial velocity requires a difference of potential of two million volts, approximately a 16-ft. spark gap. Between the softest and hardest beta rays are medium beta rays which are intermediate in their penetration.

Gamma rays are undulations of the ether or electro-magnetic waves similar to x-rays except the wave length is much shorter. The velocity of the gamma ray is the same as that of light. The gamma rays also have a difference in penetrating power, therefore, the terms of soft, medium and hard gamma rays. In general, gamma rays are from 10 to 100 times more penetrating than beta rays. Like the x-rays the gamma rays cannot be deflected by a magnet.

ABSORPTION OF RAYS

"(1)One-half of the beta rays are absorbed by one-tenth m. m. of lead and is completely absorbed by two m. m. of lead. The hardest beta rays are absorbed to the extent of 93.8% by one cm. of epithelial tissue." The intensity after passing through one cm. of epithelial tissue is, therefore, only 6.2 of that exhibited at the surface of the skin.

"(1)Gamma rays according to measurements by Geraud are one-half absorbed by 20.4 cm. of water. For theoretical purposes water may be considered as the equivalent of soft tissues in absorbing power."

According to Rutherford 26.5 cm. of soft tissues would be required for the half absorption of the hardest gamma rays.

"(1)These estimates are to be compared with the penetrating power of x-rays which are half absorbed, according to Colwell and Russ, by 4.9 cm. of soft tissues." About one-fifth of the penetrating power of radium.

Due to the destructive action of the beta rays it is necessary to filter or screen out these rays in the treatment of tumors below the surface of the skin or beneath the mucous membrane of the uterus. For this purpose platinum, gold, silver, lead and rubber are used in varying thicknesses. One-tenth m. m. of silver will absorb 50% of the beta rays, five-tenth m.m. will absorb 96%, one m.m. 99% and 2 m.m. 100% of the beta rays.

When massive doses are used it is desirable to absorb also the softest gamma rays which can be done by 2 m.m. of brass.

RADIUM IN GYNECOLOGY

In using radium in gynecology the patient should have a very thorough examination to determine whether or not there is any acute infection of the uterus or tubes which is an absolute contra-indication for its use.

CHRONIC LEUCORRHOEA

Arthur H. Curtis(16) of Chicago has done some pioneer work with radium in chronic leucorrhoea with apparently favorable results. Of thirty-six cases reported of chronic cervical discharge, thirty received from 200 to 350 mg. hours; twenty-five recovered; seven improved; one doubtful and three not materially benefited.

If there is a discharge from Skeene's ducts, he advises free incision and fulguration.

If there are gross pelvic lesions they should be corrected surgically.

MENORRHAGIA AND METRORRHAGIA

Every general practitioner has had cases of menorrhagia and metrorrhagia in women of all ages from the earliest menstrual periods to the menapause which have resisted all efforts to relieve, in some cases requiring a hysterectomy to save the patient's life.

I have treated 58 cases of uterine haemorrhage with radium in the past 8 years with only one failure and I believe a second application would have relieved this patient but she feared cancer, as her mother had died of cancer so when she had a slight haemorrhage after the application of radium I did a hysterectomy.

John G. Clark and Floyd E. Keene(2) reported 527 cases of benign lesions causing uterine haemorrhages. The youngest being only eleven, this girl received only 150 mg. hours which relieved her haemorrhage. One aged seventeen had 400 mg. hours which relieved her haemorrhage but caused hot flushes for a year.

They report fourteen failures to relieve the uterine haemorrhage due to myoma uteri which were subjected to surgical operation for relief. The doses used seem to me very small for myoma. They used 150 mg. in one patient, 1200 in five and in one 2400 mg. hours.

I believe all fibroids or myomas should receive not less than 1200 mg. hours for the smallest. I usually give them 2400 mg. hours. The large dose has the advantage of positively relieving the haemorrhage and if malignancy has begun, the large dose will destroy the cancer also.

In young women in whom it is desired to retain the menstrual function, I use from 200 to 400 mg. hours and repeat as often as seems necessary, but believe surgical removal is preferable in these cases unless the patient be a poor surgical risk.

In using radium in young girls the dose must be small, for large doses will cause the menstrual function to cease just as certainly as a double ovariotomy. From 200 to 400 mg. hours will usually accomplish the desired result. Some cases will require a second application which should be smaller than the first. In patients 35 to 40 years old there is greater danger of malignancy and every such case should be curetted and the scrapings sent to the laboratory for examination. The cessation of the menses at this age is not a serious matter as most women have their families or will not have any this late in life.

E. T. Newell(3) reports 40 cases treated successfully by radium. Thirteen under thirty-five years; twenty-seven past thirty-five; youngest fourteen years and oldest fifty-five years. Those patients under thirty years in whom it was desirable to retain the menstrual function received from 200 to 400 mg. hours. If the next period or second period was excessive a second application of from 150 to 300 mg. hours was given. If past thirty-five years the patient should be curetted and the scrapings examined for malignancy and if near the menopause a longer treatment is given. Twenty-one cases received one treatment; ten cases, two treatments and nine cases, three treatments.

The smallest dose was 100 mg. hours and the longest 1000 mg. hours in a patient past the menopause. He reports the cause of the haemorrhage in nearly all cases as hyperplastic endometritis.

J. J. Mundell(4) after reviewing the causes of uterine bleeding and reporting a case treated successfully by radium, closes with this statement, "In the past, treatment of these cases has been conspicuous by its failure. Cases have been curetted, have been treated with organo-therapy, corpus luteum extract, ovarian extract, thyroid extract, pituitary extract, mammary extract, etc., with the same dismal failure until the menopause intervened or else in some cases, hysterectomy has been done. One intrauterine application of 50 mg. of radium for 12 hours with the patient comfortable in bed for only a few days produces a cure in at least 95% of the cases."

W. A. Scott(5) reviews the literature and reports 126 cases of uterine haemorrhage not due to neoplasms. Glandular hyperplasia was found in 62 cases. After remarks on various forms of treatments he concludes by "Treatment is preferably by means of x-ray or radium."

W. P. Graves of Boston(6) does not give the number of cases treated with radium but speaks very highly of its use in haemorrhages, severe menstrual headaches, uncontrolable dysmenorrhoea, periodic psychoses and various other ailments where it is advisable to terminate the function of the ovaries.

R. T. Wall(7) reports 16 cases of uterine bleeding all successfully treated by radium.

H. S. Crossen(8) reports 400 cases of myoma with 95% satisfactory.

C. J. Miller(9) reports 183 cases of myoma and myopathic bleeding treated with radium and says, "A large percentage of the cases formerly subjected to operation can be permanently and safely relieved by radium."

Howard Kelly of Baltimore(10) after reviewing the old methods of trying to relieve these conditions concludes with this sentence, "Let every surgical text book record this 'Myopathic haemorrhage uteri, treatment, radium, surgery never'."

FIBROID TUMORS OF THE UTERUS

Personally I am rather averse to using radium in fibroid tumors of the uterus except when the tumors are small, the patient near the menopause or the patient a bad surgical risk, as a dose of radium large enough to relieve the haemorrhage will almost certainly bring on the menopause. In young women in whom it is desirable to retain the menstrual function and the possibility of maternity I believe it is better to remove the tumors by abdominal section as they can be easily peeled out of the uterus, the uterine muscle closed and the organ left in a practically normal condition.

In middle aged women or those who already have their families, also in some cases where the tumor growth has so distorted the uterus as to render the patient sterile or child bearing impossible, radium may be used. The sexual habits are established and the cessation of the menses is of less moment for the libido sexualis is now largely on the psychic side of the patient, rather than in the centers in the lower spinal cord which influence the sexual instincts. In these cases, and those women who have reached the climacteric age in which the tumors keep up the flow, nothing equals radium. There is no risk, no pain and only a short stay in the hospital.

Small tumors about the size of an orange will usually disappear after one application of 2000 to 2400 mg. hours. The larger tumors, I believe, should be removed surgically unless the patient is a poor surgical risk as a diseased heart, kidneys, tuberculosis, anemia, etc. Two years ago a large fleshy woman aged fifty-two who had never ceased menstruating and in fact the flow becoming more profuse and lasting longer, the last six months, a badly leaking heart, hemoglobin only 50%, a fibroid tumor the size of a goose egg. Distinctly a bad surgical risk, but perfectly safe for radium. Gave her 2400 mg. hours and haemorrhage ceased immediately, and tumor has entirely absorbed.

Howard Kelly(10) has this to say about fibroids: "Let me pronounce this dictum: 'He who would give his patient the same consideration he would give to his wife or his sister must put radium first in the treatment of fibroid tumors'."

Kelly does not give the number of cases of fibroids treated by him with radium but has this to say: "In the uncomplicated fibroids when associated with excessive bleeding, there is no treatment as satisfactory as radium. In our hands there has been, in several hundred cases, no mortality and the bleeding can be checked in almost every case."

Kelly recommends using radium even in large fibroids, claiming a diminution in size and in some cases the disappearance of the tumor, as he says the radiation in no way interferes if a later operation is found necessary. He further says, "Let it be borne in mind, however, that the fibroid may be radiated away entirely and the menstruation and the power of conception preserved. We have had this happy development in several of our own cases." Further: "It is blessed foolishness to declare that a mutilating surgical operation which removes the womb just for the sake of getting some fibroid tumors encapsulated in it, is a satisfactory operation while to stop the growth of the tumor and shrink it with radium is unsatisfactory. Surgery developed in men's hands has dealt too lightly with mutilating operations on women; I wish the case might be reversed for several decades, women operating and men suffering the mutilations. I think there would be a large procession in favor of wise conservatism."

CANCER

Radium for a time was hailed as a certain cure for cancer by some over-enthusiastic radiologists, but time has shown us that there is no certain cure for this dread disease which destroys nearly one hundred thousand of our population annually, of which number about twelve thousand are cancer of the pelvic organs.

We find a number of our leading gynecologists are the strongest advocates of radium in cancer. In early cancer of the fundus I still believe a hysterectomy should be done following Wertheim's technique, or a modification of it.

Howard Kelly(10) has this to say regarding radium treatment of cancer of the body of the uterus, "I still believe that surgery is the method of choice, but I am thankful where surgery is excluded, to be able to use radium with so much success and hope of a prolonged and remarkable improvement. In some of these patients curettage at a later date has shown the changes characteristic of radium and an apparent absence of cancer".

Cancer of the cervix he divides into three groups:

1. With extensive lateral involvement and fixation.
2. Where the lateral infiltration is moderate and where neither side is fixed.
3. Where the disease appears limited to the cervix and mobility not interfered with.

Of the first group he says, "Operation is worse than futile". I believe every gynecologist of wide experience will agree with him.

Of the second group he says, "This is a group where the surgeon's hands ought to be tied." I suppose because the temptation to operate is so great. Further on he says, "Here, too, radium often cures and surgery never".

Dr. C. F. Burnam(10), Kelly's associate, reported their cases of cancer treated prior to January, 1915, at the American Radium Society at St. Louis in May, 1922. "Of ten operated cases, treated by combination of radium and operation, five are living and well today. Of four cases treated by radium alone on account of bad physical condition, two survived, 50% of seven year cures in each group. Fifteen cases primarily operable or inoperable recurrent in 1915 are in May, 1922, living and well. I think such results speak for themselves."

John G. Clark and Floyd E. Keene(11) report 313 cases of cancer of the uterus, 112 patients living and 201 dead. All the patients were given 2400 hours for the first application with only an occasional exception. In the exception they do not state whether the dosage was larger or small. They report 24% of the inoperable cases living from three to seven years.

Of the operable cases they say, "In comparing the vast outlay of surgical effort put forth in the latter class of cases with the great dangers attending the radical operation, as to both mortality and disabling results, we feel convinced that the time has about, if not quite, arrived when we shall cease to speak of any operable cases of cancer of the cervix, but shall submit them all to irradiation. Certainly our results have lead us very convincingly in this direction. As the palliative results have been so excellent and as our statistics now appear, the actual cures have been so relatively large in the hopeless cases, it would appear illogical to submit the early operable case to the great dangers of surgical intervention and reserve only the inoperable case for irradiation. While we still discuss operability, we are indeed turning to this method of procedure in such a small minority of cases in our clinic as to carry our statistics in this line almost to the vanishing point".

Rex Duncan(12) of Los Angeles gives a detailed report of 236 cases and says, "I wish to say, however, that had there not resulted a single cure, the relief from pain, haemorrhage, odorous discharge and general improvement, with a consequent prolongation of life and comfort would have been sufficient to justify treatment in practically every case". He reports 128 cases of inoperable cancer of which 51 are dead, 15 improved, 6 not traced and 56, or 44%, clinically well.

Recurrent cases he reports 76, of which 46 are dead, 9 improved, 4 not traced and 17, or 22%, are clinically well. Time elapsed, 1 to 4 years. Not enough time to call a cure.

Operable cases he reports 15, including 2 with early carcinoma of the fundus who are apparently well. Two are dead, 13, or 86.6%, are clinically well. Time elapsed, 1 to 4 years. Not enough to call a cure.

F. J. Tausseg(13) reports his experience with 120 cases of carcinoma; borderline or inoperable and concludes radium will cure about 20% and give marked temporary relief in about 90%.

Henry Schmitz(14) of Chicago, whose work I have had the opportunity of watching to some extent and who has had as large an experience in treating carcinoma of the uterus with radium as anyone in this country, having treated and kept accurate records of 423 cases of cervical cancer classifies his cases into five groups.

Group 1. "The localized carcinoma". The neoplasm is clearly confined to the uterus.

Group 2. "The borderline carcinoma", where it is doubtful whether the neoplasm is still confined to the uterus or has begun to invade the neighboring tissues.

Group 3. "The clearly inoperable carcinoma", in which an invasion of the neighboring tissues and organs or the regional lymph nodes can be demonstrated.

Group 4. "The advanced carcinoma", which is characterized by a "frozen pelvis", a marked cachexia, and distant metastases.

Group 5. "The complicated carcinoma". The cancer may be limited to the uterus but grave constitutional diseases coexist.

"The indication for treatment must be based solely on such grouping. A localized cervical carcinoma can be safely eradicated by an abdominal or vaginal pan-hysterectomy".

He states the primary mortality of the Wertheim operation is from 15 to 25% and is only successful in Group 1, when the malignancy is confined to the cervix. In groups 2 to 5 surgery is contraindicated and it is in these groups that 80 to 90% of the cases are placed.

In recording results obtained by radiation he states three points should be kept in mind: (1) The subjective relief of the patient. (2) The automic relief of local healing and (3) the absolute cure, that is, after 5 years.

Of the 423 cases. 303 were cervical cancer. In 13 cases the disease was limited to the cervix and 11 of these cases are alive and well. Twenty-six were borderline cases. Fourteen of these are alive and well. One hundred fourteen were classified as inoperable. Thirty-one of these are alive and well. Seventy-five cases were classified as advanced. Ten of these are alive and well. Seventy-five cases were classified as recurrent. Eleven of these are alive and well. This gives seventy-seven cases alive and well of 303 cases treated, or 25.4 per cent cured.

If only the operable cases are considered, that is, completely ignoring all cases coming in groups 3 to 5, then there will be 39 cases treated with radium which could have been operated and of these 39 cases, 25 are living and well, or 64.1 per cent cured.

There are 294 cases in groups 3 to 5 which are classified as impossible surgical risks but of these 52 are living and well, 17.6 per cent of cures of the inoperable cases.

I believe you will agree that Schmitz has shown wonderful results. Few surgeons can show better than 25 to 35% of even the cases he has classified as group 1 and almost no recoveries in groups 2 to 5.

Schmitz does not agree with a number of radiologists in combining radium and surgery, or the Percy cautery.

A. J. Oschner of Chicago for many years used the large cautery in carcinoma of the cervix bceause the heat would destroy the cancer microbe far beyond the point of cauterization, but since watching Schmitz' cases for the past four years he did not operate on any cases of carcinoma of the cervix last year. He says, "In all probability many of the microbes which are located in the glands at a considerable distance from the original cancer are destroyed directly by the radium".

He advises against removal of a section for examination as the incision of the knife removes the barrier that Nature has placed for protection and microbes are set free directly in the lymphatic circulation and metastases occur.

Case 1. Mrs. W., age 45, widow, four children. First delivery instrumental—cervix and perineum lacerated. No cancer in family. In July, 1916, she began having offensive leucorrhea and occasionally more profuse menstrual discharge. In October she had quite a severe hemorrhage and again in November. Was then examined and told she had ulcer of the cervix and was treated locally for about a month by her physician, the ulcer spreading continually. I saw her January 3rd, 1917 and found a large crater in cervix, extensive lateral infiltration and uterus fixed. I refused to operate but suggested radium, not with any hope of complete recovery, but to satisfy the patient and the family that something was being done. She came to Chicago and was given 3200 mg. hours. This stopped all haemorrhage and odor and she gained rapidly. She returned in five weeks and was given 2160 mg. hours. In three months everything was healed, no discharge, she gained 40 pounds in weight and took a position as clerk in a store and is still working there. Her only complaint is that she is too fat.

Case 2. Miss S., age 43. Never sick in her life. Father died of cancer of the bladder in December 1918. Soon after returning from his funeral she noticed a thin vaginal discharge and consulted a lady physician who brought her to me in January, 1919. I found the cervix indurated and very slight lateral involvment, the uterus still movable. I advised immediate hysterectomy. She was on the operating table in ten days and in that short interval the cervix had broken down and a cavern formed that would admit my thumb and the uterus had become fixed. I simply curetted and cauterized and in a few days told the patient of the rapid progress and advised radium which was applied one week later, giving her 6000 mg. hours. She had no unpleasant reaction from this large dose. In six weeks I gave her 4000 mg. hours. Her uterus apparently has entirely disappeared and she is the perfect picture of health and would easily pass for 32 or 33 but has gained a little too much in weight.

Case 3. Mrs. S., age 56, widow, 6 children. Past and family history negative. Menses ceased at 47. In the spring of 1919 she noticed a little vaginal discharge with occasionally a streak of blood. In July she had a very severe haemorrhage and I was called. I found advanced carcinoma and large crater in cervix, lateral induration, uterus fixed. Gave her 4500 mg. hours radium. In eight weeks the cervix was entirely healed, the uterus freely movable and she is still apparently perfectly well.

Case 4. Mrs. M., age 65, widow, 10 children. She is a German woman and could not speak English so I could not get much of her history, but the discharge from the vagina began about October 1919. She had a severe haemorrhage in November and I was called by her physician. I found a large crater in cervix, the uterus immovable. I gave her 4500 mg. hours and was going to give a second dose in about six weeks but found uterus all gone and the vagina terminating in a sharp peak and perfectly healed. A recent letter from her son says, "Mother seems to be perfectly well."

Case 5. Mrs. H., age 42, had recently married a young husband. Soon after marriage she noticed slight blood streaks in leucorrheal discharge which she had had for some time. She went to her physician who had his office in the same suite with me and when he examined her he started a very severe haemorrhage and sent for me to stop it as he thought she would bleed to death on the table. Examination revealed a large fixed uterus, a large crater bleeding furiously. I packed this with Munsell's powder which stopped the haemorrhage. In ten days I gave her 4500 mg. hours of radium which stopped all haemorrhages and her general health improved considerably but in a short time a fistula developed from both the rectum and bladder, cachexia increased and she finally died but the family and she were all grateful for the temporary relief obtained from the application. This is my only fatal case to which I have applied radium. I have applied radium in a large number of cases of carcinoma but those mentioned have made the most striking recoveries.

I believe at least one case can be considered cured as it was eight years in January, 1925, since her first treatment.

Case 2 has gone 5 years and is apparently well.

Number 3 has gone 5½ years and is well.

Number 4 has gone 5 years.

This is four cures, all inoperable and alive and well over 5 years.

I have applied radium in a large number of cases of carcinoma but not enough time has elapsed to report on them. I want to mention one case of chorio-epithelioma.

R. L. Payne of Norfolk, Virginia(15) in the Annals of Surgery, reports four cases, one treated 18 months, one 11 months and one 4 months with radium and apparently well.

Chorio-epithelioma as you all know is the most malignant of all neoplasms, 76% dying within 6 months regardless of hysterectomy as soon as diagnosis can be made. Therefore, while the number of cases is small and the longest only 18 months, two of the cases have lived beyond the average length of life after diagnosis is made.

I have treated only one case of chorio-epithetioma with radium and that was May 3rd, 1922. In a recent letter she states that she is perfectly well.

This is not a complete review of the literature but reports on 765 cases of uterine haemorrhage of the results obtained by the various authors, varying from 95 to 100% successful. Eight hundred eighty-three cases of fibroid tumors with practically the same results and 1092 cases of cancer with good results in inoperable and recurrent cases of from 17.6 to 44 per cent. Cases that are hopeless from a surgical standpoint.

In the operable cases the cures by various authors vary from 64.1 to 86.6 which is much above the reports of any surgical clinic, therefore, I believe we are warranted in agreeing with Clark and Ochsner in saying all cases of cervical carcinoma should be treated by radium and none subjected to surgery.

REFERENCES

1. Radium Therapy by Frank Edward Simpson, A. B., M. D.
2. Journal of American Medical Association, August 12, 1922.
3. Journal of Tennessee State Medical Association, 1922.
4. Virginia Medical Monthly, 1922.
5. Journal of Obstetrics and Gynecology, Novemver, 1922.
6. American Journal of Obstetrics and Gynecology, June, 1922.
7. Penn. Med. Journal, July, 1922.
8. Journal Missouri State Medical Association, February, 1922.
9. Surg. Gyn. and Obs. May, 1922.
10. Therapeutic Gazette, November 15, 1922.
11. Journal of A. M. A., August 20, 1921.
12. Journal Missouri State Medical Association, July, 1921.
13. Northwest Medicine, March, 1923.
14. Annals of Surgery, August, 1921.
15. Journal of A. M. A., June 19, 1920.

PNEUMOCOCCUS PERITONITIS

Frederick G. Kolouch, M. D., Schuyler, Nebraska.

Pneumococcus peritonitis is a very interesting condition, and while not very common, it occurs with sufficient frequency to make it more than an incidental factor in the differential diagnosis of the acute abdomen in the child, especially when the onset is independent of any pulmonary lesion.

The condition has been well described by Jensen(1), Annard(2), Rischbieth(3), Cameron(4), Abt(5), and the later writers have added little to their description of the disease. Syms(6) made a very thorough review of the subject in 1918, and outside of a small experience that has developed regarding the types of the pneumococcus involved, his conclusions are valid today.

ETIOLOGY

The etiology of this condition and the portal of entry of the pneumococcus remain an unsolved problem. It is a disease of childhood. Girls are affected three times as often as boys. Some authorities think it is a post-pneumonic process, the original condition having been mild, or having pretty well cleared up when the patient comes under observation. This relation is not established but is probable in a proportion of cases.

PATHOLOGY

Charles L. Gibson(7) is of the opinion that the disease gains access to the peritoneum through the blood. It is probably always a bacteremia, the organism circulating through the blood and localizing in the peritoneum. The appearance of the peritoneal cavity is very characteristic, the intestines are inflamed and distended, the coils are glued together by the roughened peritoneal surfaces and by the fibrinous exudate lying on them. The whole peritoneal cavity seems to be involved, there being a characteristic exudate consisting of a serous fluid in which are floating large fibrinous, greenish yellow flakes. The exudate is odorless unless it is secondarily infected by the colon bacillus. If the patient lives, adhesions form in the exudate which limit the process, very often causing a localized abscess. In this it differs from other forms of purulent peritonitis. The source of infection is undoubtedly through, the blood stream, but where the blood becomes infected is still a matter of controversy; some think the lungs, others consider the middle ear as the chief portal of entry for the pneumococcus, while still others think the intestines are most often the source of infection. That peritonitis may originate from the migration of bacteria through microscopically intact intestinal walls was proved by Mandl(8). He alludes to the pathogenic parallel of these cases to those of biliary peritonitis, without perforation of the gall bladder.

CLINICAL COURSE

Clinically the course of the disease may be divided into three stages: (1) A stage of onset, where all the symptoms begin violently, and very frequently death occurs. At this stage it is easy to confuse the condition with perforative peritonitis or acute gastro-enteritis, the high fever and high leucocytosis being the only symptoms which would serve in the differential diagnosis. (2) After some hours or days there may be considerable improvement in the condition, the high fever usually persists for two or three weeks, there is intense abdominal pain, persistent vomiting and evidence of free fluid in the abdominal cavity. (3) After recovery from the general symptoms a residual collection of pus is usually left behind, it may be subdiaphragmatic, or it may point near the umbilicus. There is also a class of cases which simultaneously with the onset of peritonitis develop a pneumonia, they usually present well marked abdominal signs and a pneumonia of one or both lungs.

SYMPTOMS

The first symptom is usually severe pain, which is general all over the abdomen, occasionally it becomes localized to the umbilicus or right iliac fossa, pain is soon followed by vomiting and diarrhea. The abdomen rapidly becomes tender, immobile and rigid, later it becomes distended. Fever is persistent from the onset, the temperature may be as high as 104F. Leucocytosis is generally absent the first day, but a rise in leucocytes begins on or about the third day and may continue until it reaches 30 or 40 thousand.

DIAGNOSIS

Bearing in mind that pneumococcus peritonitis is a general septicemia, culminating in diffuse infection of the whole peritoneal cavity, we can readily see that the patient is, in general, more ill than can be accounted for by the degree of peritonitis present. It must be differentiated from peritonitis due to other causes, such as appendicitis, gonorrheal peritonitis and streptococcic peritonitis. The similarity of the condition and appendicitis is much less apparent when you consider appendicitis a local inflammation without septicemia at the onset. Gonorrheal infection may be detected by an examination of the vagina and vulva and the discharges. Hemotogenous streptococcus peritonitis is recognized by its etiology, either a septic sore throat, or an influenza infection. Typhoid fever is another condition to be thought of but the leucopenia accompanying it contrasts with the hyper leucocytosis of pneumococcus peritonitis.

TREATMENT

It is a fundamental surgical law, in the control of any infectious process, to direct the therapeutic aim at the primary focus of infection. In these cases there is no possibility of closing the portal of entry of the pneumococcus, so the inadequacy of laparotomy done early in the disease is most apparent. With our present limitations of diagnosis it would be far from prudent to take the chance of letting a perforative peritonitis slip through our hands. On that ground alone would an immediate laparotomy be permissible. In cases where the diagnosis is easily made, it is a better plan to wait, put the patient on expectant treatment until the acute stage subsides and then drain the residual abscess wherever it is located. Type I serum should be given until the exudate and blood cultures prove the presence of other strains. An illustrative case here follows:

Patient G. O., female, ten years old, admitted to the hospital November 23, 1923. Ten days previously had an abrupt onset of chills and fever, later followed by abdominal pain, vomiting, diarrhea, the symptoms continuing to admission but not as stormy as at the onset. Her temperature was 105F the day she became ill and when she was brought to the hospital it was 101F, pulse 134, white cell count 33,000. Her family physician told me that he had made repeated examinations of her chest with negative findings. He also stated that the abdominal symptoms, such as, pain, distention, diarrhea were much more pronounced a few days previous.

Examination of head, chest, and extremities was negative, but the abdomen was distended and tender, and there was an area of dullness just below the umbilicus, which I could not map out on account of the tenderness and pain. The girl was catheterized to make sure that it was not a distended bladder, but the dullness persisted. On account of the history at onset, a diagnosis of cryptogenic peritonitis, followed by abscess formation was made, the pneumococcus being the most probable etiological factor.

OPERATION

A midline incision was made from the umbilicus to the symphysis pubis, and on opening the peritoneum, a serous odorless fluid escaped in which were floating many large greenish fibrinous flakes. The coils of the small intestine were pretty well agglutinated, some quite firm adhesions had already formed, but on searching for a probably local focus of infection, we had no trouble in locating the appendix, which participated in the process only with its peritoneal coat. The appendix was removed and a drainage tube was inserted into the cul de sac. Cultures of the pus proved to be pneumococcus. Patient made a smooth recovery and at present is in good health.

CONCLUSIONS

1. Whenever we are confronted with an acute intra-abdominal infection in the child, we should always be admonished of the possibility of a pneumococcus peritonitis.

2. There is still a tendency to regard the mistaken diagnosis as inevitable and to look upon pneumococcic peritonitis as a condition which is found only at laparotomy when the appendix about to be removed proves to be normal.

3. The typical cases have a symptom syndrome which should make the diagnosis reasonably certain.

4. Laparotomy, if necessary, should be deferred until the process has become localized.

5. On account of the septicemic nature of the disease, the mortality will always necessarily be high.

6. Lymphaticostomy as performed by Costain(9) may prove to be the procedure of choice in the treatment of the condition.

BIBLIOGRAPHY

1. Jensen J. Lanngenbeck's Arch. f. klin. Chir. 69. 1903.

2. Annard, W. F. and Bowen, W. H., Lancet 1:1951. 1906.

3. Rischbieth, H., Quart J. Med. 4, 1911.

4. Cameron, H. C., Brit. J. Child Dis. 9. 288. 1902.

5. Abt, I. A., New York M. J. 105, 796, 1917.

6. Annals of Surgery, March, 1918.

7. Johnson, Kenneth, Surg. Clinics of N. A. Vol. 1:2, 1921.

8. Mandl, F., Cryptogonetic Peritonitis, Deutsche Ztschr. f. Chir., 1923, 289.

9. Costain, S. G. O., 1923, XXXVI, 395.

"Which weeds are the easiest weeds to kill?" asked the city chap of the farmer.

"Widow's weeds," replied the farmer; "you have only to say 'wilt thou' and they wilt."

PERNICIOUS ANEMIA*

G. I. McCrea, M. D., Table Rock, Nebr.

I have chosen this subject for my paper this evening and shall confine my remarks to this one form of anemia. I shall not try to present anything new in this disease but to safeguard the future that we may recognize the disease in time.

Definition: Anemia is a deficiency of blood or deficiency of the relative number of its red corpuscles; the latter being the most generally understood meaning and use of the term.

Cause: The underlying cause of idiopathic anemia is not known. Among the exciting causes may be mentioned pregnancy, syphilis, and great worry. It is thought by some due to toxin produced by the bothriocephalus latus. Constitutional factors appear to play a role in blood diseases. Decestello reports the case of a family in which three sisters and an uncle all died of pernicious anemia. Sukler and Eshner cite three cases in one family—father and two girls.

Clinical History: Wilson and Evans of John Hopkins claim it is a disease of adult life. It is never seen in children; is uncommon in old age and occurs most frequently between forty and sixty years of age and is very rare in negroes. The anemia once established practically never completely regenerates.

Pathological Anatomy: The blood is scanty and pale with diminished red corpuscles and hemoglobin showing a very feeble tendency to coagulate. There is no increase in white corpuscles. The body of the patient is rarely emaciated, indeed he may be unusually stout. In most cases the skin conjunctivi and other mucus membranes show a peculiar lemon tint. At autopsy we find muscles red in color and fat pale yellow; hemorrhage common upon the skin and sear surfaces; heart large, flabby and empty; muscular substance often intensely fatty. Spleen and liver are not enlarged.

Osler says in no condition do we find more extreme fatty degeneration. Lungs show no special change. Bone marrow may resemble that of a child changing from a normal fatty to fetal or lymphoid condition.

Symptoms: It begins insidiously with increasing languor and pallor, the muscular weakness compelling patient to take to bed. Cardiac palpitation, dyspnoea, attacks of syncope, oedema and swelling of ankles, occur. Petchial spots are scattered over body; tenderness over sternum and over superficial bones is a frequent symptom. Lack of appetite, nausea, vomiting occurs with dyspepsia. As disease progresses fever develops, temperature 101 to 102. There is disorder of vision, a result of retinal hemorrhage. The cardiac sounds are feeble and associated with soft basic or anemic murmurs.

The blood shows under microscope a reduction in red corpuscles as low as five hundred thousand and less to the millimeter. In addition, the following points of great diagnostic importance are to be noted:

1. The individual red corpuscles are richer than normal in hemoglobin.
2. Many red corpuscles are larger than normal.
3. The red corpuscles are deformed, some being ovoid, others irregular in shape.
4. There are present red blood cells which are smaller than normal.
5. Nucleated red blood cells which have a pale staining nucleus.

Diagnosis: Progressive pernicious anemia is distinguished from simple anemia and chlorosis by the great severity of former. From leucocythemia by the normal size spleen and liver and the absence of leucocytosis.

Prognosis: Unfavorable.

Treatment: The use of arsenic and iron diet, rest in bed. The arsenic should be pushed. Cabot claims it is the only drug that will have any effect in this disease. Blood transfusion has been given an extended trial in this condition but without permanent cures. It seems to have a distinct field to precede and follow splenotomy.

Splenotomy has been followed by improvement, but does not produce cures.

I have a case to report:

W. B., single, age 57. Never sick. Never had any disease except diseases of childhood; never had venereal diseases. Always healthy. Occupation, depot agent. His trouble began in 1918, Jan. 24. I was called to his home and found him very weak, temperature 102, slight cough, heart rapid, pulse 160. Complained of shortness of breath; constipated; poor appetite.

Treatment: Put to bed. Gave supportive treatment for two weeks when temperature was normal and gaining in strength. I sent him to Dr. Bailey's Sanitarium for diagnosis as I was unable to make one. A blood count was made—red blood corpuscles two million; white blood corpuscles five thousand; hemoglobin forty. A Wassermann, negative. Sent home, no diagnosis made except he was anemic. Urine analysis, specific gravity 1020, acid reaction no albumen, no sugar. I gave him iron and arsenic by mouth for some weeks. He grew worse and I informed his sister that I did not think he could live. At this time Dr. Keller of Falls City asked me to try protogen which I did. He began to improve in a short time and was able to walk across the room. He gradually improved under the treatment until he was able to go to depot. I used the protogen and iron for a year when he began to complain of not being able to stand. His knees would not hold him up. I saw he was doomed if something was not done at once so I gave him 5cc. iron and arsenic intravenous every day for a week then every other day for a week then twice a week and so on for three months, when hypos. were stopped. He went for six months without any complaint, ate and slept well when one day he phoned from the station that he could not stand up. He was driven to office and I used the hypo. of iron and arsenic, had him go to bed for several days. Treated him at home until he was up which was about two weeks. These spells come on about every four to six months when I would use hypo. of iron and arsenic, which would keep him on his feet. In 1919 I used 70 hypos. In 1920, I used 53 hypos. iron and arsenic. In 1921, used 26 hypos. iron and arsenic. Hemoglobin at this time was 30. In 1922 used 33 hypos. iron and arsenic. In 1923 used 37 hypos. iron and arsenic. In 1924 used 38 hypos. iron and arsenic. Hemoglobin 30. On Sept. 22, of this year he was at depot when operator called me and said Mr. B. could not talk. I told him to come to office at once. His sister drove him to the office. He was very nervous, had no co-ordination of speech (aphasia), ate and slept well. He was this way for three weeks. I used hypo. of iron and arsenic for a month when he resumed his work.

---

*Read before the Third Councilor District Meeting, Table Rock, Nebr., Nov. 20, 1924.

On Nov. 16 a white and red blood count was made which was as follows: Red blood cells 1,180,000, white blood cells 7,175, hemoglobin 35. Blood pressure: systolic 126, diastolic 70.

OTHER CAUSES OF GLAUCOMA

D. D. Sanderson, M. D., Lincoln, Nebr.

At the March, 1924, meeting of the Lincoln Eye and Ear Society (N. S. M. J., Volume IX, No. 8), I presented a brief report of my studies relative to adolescence glaucoma. In this article I reported finding close relations between the internal secreting glands and glaucoma. The latest review of the literature and concluding comments by H. Gradle (A. J. O., August '24), furnishes an excellent summary of the causes of glaucoma. Not only has he given the opinion with comments of various writers but also has carefully presented his own ideas and has advanced a somewhat different argument than those usually put forward regarding the cause of this troublesome disease.

In contrast to the usual thoughts that glaucoma is more often a local condition and caused by some affection relative to the eye only, except in those cases as a result of injury, I have come to the conclusion that it is more often an affection of the eye caused by a derangement of the general system. I feel positive this derangement is caused by the internal secreting glands not properly functioning. Their lack of proper secretion in turn through their influence on the nervous system causes the disease in question. Long arguments for and against each theory of the cause of glaucoma may be advanced. However, the fact that an eye may continue to be actively glaucomotous and eventually be necessarily removed for the relief of the disease even after all local treatment and surgery possible have been used would indicate that our former modes of treatment have not been without limitation as to their usefulness. With the fact of our former failures before us we must turn to some other theory for the cause. The abnormal activity of the internal secreting glands when returned to normal by either proper diet or medication gives normal tone to the tissues of the eye relieving the diseased condition. I have been unable to reach any definite conclusion that the entire disease was caused by one internal secreting gland; but rather a disturbance of the internal secreting system of glands which appear to be under one control center whether nervous or chemical. Sajous' conclusions that the internal secretions are controlled through a nerve center is well founded. He has not as yet apparently been able to satisfactorily determine whether the secretion of the normal gland substance is a stimulant to the brain center and the same brain center in turn stimulates the gland secretion or whether it is some distant substance that stimulates the nerve center. This theory may be questioned after considering that the normal activity of the internal secreting glands may be re-established either by gland extract or by other medication. Whatever the conclusions from the theory may prove to be and whatever the final determination as to the mode of action of the various substances, it must remain for our physiologists to determine. Clinical study can only give us the results obtained from administration of various forms of medication and we must draw our own conclusions by observation. The clinical observation would encourage the conclusion that the ovaries play a most important part in the causes of glaucoma. This conclusion is encouraged by the fact that adolescence glaucoma oftentimes is relieved with the establishment of normal menstration, also the major number of adult cases suffering from glaucoma are those in whom the reproductive organs have become less active. Our physiologists may be able to show that this is only the result of the action of some other substance upon the ovary secretion. As stated above, my observations have encouraged the conclusion that the internal secreting glands are closely related in their activity. The patients show a more decided improvement as a result of therapy directed toward the entire system of internal secreting glands than one definite gland even though the ovaries usually appear to be the principle controlling gland.

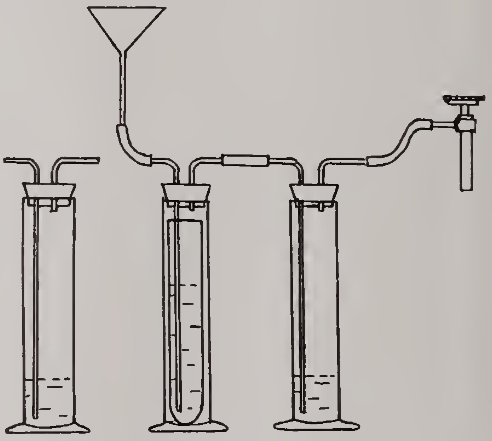
A BLOOD-NITROGEN METHOD FOR THE PRACTITIONER

Miles J. Breuer, M. A., M. D., F. A. C. P., Lincoln, Nebraska.

The total non-protein nitrogen content of the blood is probably the best single index to the patient's condition in deficient kidney function; but the estimation of its quantity is, as a rule, a difficult procedure for anyone except a laboratory specialist. For that reason, the urea content is generally determined, even though it is less valuable as clinical evidence than the non-protein nitrogen; it is, however, possible to determine it with less complicated methods and apparatus.

The following method for non-protein nitrogen in the blood follows in a general way the ordinary methods as practiced today; but a number of alterations have been made so that its use would be practicable in the hands of a man doing general practice. It does not involve the use of a colorimeter, of a standard nitrogen solution, nor of any apparatus beyond what is found in the ordinary clinical laboratory, in the office of the average city physicion; nor does it require any specialized chemical knowledge or skill. It does, however, require ordinary ability in laboratory procedures; and good results require a little practice in this particular method.

The outline of the method is as follows: Oxalated blood is precipitated by 5% trichloracetic acid; the filtrate is treated by the micro-Kjeldahl method of nitrogen digestion; the resulting ammonia is driven off by means of a concentrated solution of fixed alkali and passed through a measured quantity of fiftieth normal hydrochloric acid. The un-neutralized residue of hydrochloric acid is then titrated back with fiftieth normal alkali. The amount of fiftieth normal hydrochloric acid that has been neutralized by the ammonia from the Kjeldahl mixture is directly proportionate to the amount of non-protein nitrogen in the blood. The technic is as follows:



Method of introducing alkali into the Kjeldahl mixture.

3 cc of oxalated blood are diluted to ten times that volume (30 cc) with 5% trichloracetic acid. The mixture is allowed to stand 30 minutes and filtered.

10 cc of the filtrate (in duplicate if desired) representing 1 cc of blood, is placed in a hard-glass test tube, of a size that will fit inside a cylinder of the aeration appartus, so that it would not be necessary to transfer the contents and thus dilute the mixture. Into this, add 0.2 gm K_2SO_4, two drops of 10% $CuSO_4$, 1 to 2 cc of concentrated H_2SO_4, and a pinch of powdered pumice or kaolin to prevent bumping. These reagents must be of the highest chemical purity (nitrogen-free).

Boil this over a microburner or alcohol flame, first gently to remove the water, and then until the digestion is complete, i. e., 2 minutes after the mixture has become colorless. The final oxidation is facilitated by the addition of 1 or 2 drops of hydrogen peroxide. A good way to prevent the fumes from getting about the laboratory, is to invert a funnel over the micro-Kjeldahl tube and by means of a filter-pump, draw the fumes through a wash-bottle filled with water.

Allow the digestion-mixture to cool, and add 3 to 5 cc of distilled water. Place the tube in the middle cylinder of an ordinary urea aeration apparatus. The exhaust of this cylinder washes through the third cylinder, which contains 10 cc of N/50 HCl; toluene or kerosene may be added to prevent frothing. The intake tube of the middle cylinder (the one that reaches to the bottom) is connected with a rubber tube to a funnel, through which is introduced into the mixture, a 50% solution of NaOH; about 4 cc of this solution is equivalent to 1 cc. of concentrated H_2SO_4, and a definite excess should be added. Pour the alkali in slowly; and then quickly connect to the exhaust of No. 1 cylinder, which contains weak sulphuric acid in order to remove laboratory ammonia from the air that enters the apparatus.

Aerate about an hour. Then titrate the HCl in cylinder No. 3 with N/50 NaOH, using alizarin as an indicator. Each cubic centimeter of hydrochloric acid that has been neutralized by ammonia from the Kjeldahl mixture, is equivalent to 0.00028 gm. of Nitrogen.

THE ETIOLOGY AND PREVENTION OF SCARLET FEVER*

John D. Reid, B. Sc., M. D., Pilger, Nebr.

More work has been done in the past year on the etiology, treatment, and prevention of scarlet fever than on any other of the contagious diseases.

For many years the causative factor in this most dreaded of all diseases had succeeded in escaping its pursuer. For a long time the finger of suspicion has pointed at the streptococcus hemolyticus but it was not until the beginning of last year that this organism was definitely and finally proven to be the guilty one.

Jackman, in 1905, said "The streptococcus is indeed the most common and most dangerous of the agents of secondary infection of the disease but is not the true causative organism of the disease".

Mallory about this time discovered protozoon like bodies in the skin of scarlet fever patients. Other investigators also found them but they failed to measure up to the requirements of an etiological factor and in due time were given up and other leads followed.

Then what were termed "inclusion bodies" were studied and they in turn were found innocent. The streptococcus was also studied carefully although nothing was proven against it except that it was in bad company, being always present in the throats of scarlet fever patients.

In 1918 the severe forms of pneumonia occuring in the camps of the soldiers caused a careful investigation to be made by a commission appointed for that specific purpose. In the lungs of deceased patients were found pure cultures of the streptococcus hemolyticus. This finding renewed interest in the study of this germ, Dochez, Avery, Bliss and others working along this line were able to isolate different strains of the streptococcus and found that one of them was a constant factor in the throats of scarlet fever patients, it was found also in scarlet fever wounds and in milk. Thus the web of evidence was tightening about it, as our friends, the attorneys would say.

This germ was used and an effort was made to produce the disease in animals, as the monkey, rabbit, guinea pig and dog but with rather indifferent success. An occasional animal would develop a rash. The experimentation resulted in nothing definite being accomplished.

In 1923 Drs. Dick and Dick, working on this subject in the McCormick Institute of Infectious Diseases, had the opportunity to study the case of a nurse who had contracted the disease. From a sore on her finger a few drops of pus were obtained which proved to be streptococcus hemolyticus infection. This was cultured and with a four day old culture 5 volunteers were inocculated by having their throats swabbed with this growth. Result: 3 showed nothing, 1 a sore throat and the 5th developed a typical case of scarlet fever.

The Dicks then passed the culture through a Berkefeld V filter in order to find out if there might be a virus beyond the range of the microscope as yet undiscovered. With this filtrate they again inocculated 5 other volunteers, none of whom showed any symptoms. 4 were then swabbed with the unfiltered as in the first series, 2 showed no effect while 2 had sore throats, the 5th one 13 days after the inocculation with the filtrate was treated with the unfiltered and in 48 hours had scarlet fever. From this the Dicks concluded that there was no virus in the filtrate but that the source of infection was in the streptococcus hemolyticus itself.

---

*Presented to the Madison County Medical Society, Norfolk, Nebr., January 20, 1925.

Following the experimental production of scarlet fever, work was begun on skin tests. The filtrate which failed to cause the disease when swabbed on the throat was injected 1-1000 intradermally into both convalescents and into those who gave no history of having had it.

This resulted in a red area occurring more often in those giving no history than in those just recovering from the attack.

Tests were carried out on 153 individuals with the following results:

Of 72 with no history of the disease 35 were negative, 7 slightly positive, 17 positive, and 13 strongly positive.

Of 65 convalescents, 62 were negative and 3 were slightly positive.

Of 16 with a history of scarlet fever, 15 were negative and 1 positive. There was 41.6 positives in those giving no history of the disease.

The Dicks then took a series of reactors and injected filtrate into their arms and in from 4-6 hours symptoms of scarlet fever as fever, nausea, sore throat and rash appeared in every one. The lesson would indicate that a toxin generated by the streptococcus hemolyticus was the cause of the disease, the culture on the tonsil requiring 48 hours for its development.

Interpretation of tests: Negative where only the needle prick showed at the end of 24 hours; slightly positive when the red area was less than 2 cm. in diameter; positive when from 1.5-3 cm., and strongly positive from 3-7 cm. The reactions are thus classified at the end of 24 hours.

The test is very similar to the Schick but of shorter duration appearing in from 4-6 hours and gradually spreading according to the intensity of the reaction. In any case it is at its height in 36 hours after which it fades out, leaving a yellowish spot which persists for a week or ten days.

Dr. Zingher, after a thorough check, is convinced the Dick test is as valuable for scarlet fever as the Schick is for diphtheria, and to prove his faith in it had his own children tested, the first in New York City he says. Drs. Dick have been able to fulfill all the postulates of Koch with the streptococcus hemolyticus.

Application: Drs. Dick found that after positive reactors had received a certain number of injections of the filtrate they no longer reacted but were negative. The toxin is given every 5th day until 3 doses are given and 7 days later the skin reaction has proved negative.

They recommend the following procedure in preventing the disease: If streptococcus hemolyticus is present and the skin reaction is positive, serum from a convalescent should be given, if no culture is shown the active immunization is to be carried out by the three injections of filtrate. Where the skin is negative nothing need be done — the person is immune.

This plan was carried out on a list of 125 individuals exposed to the disease: 73 nurses tested and immunized before exposure and 52 children exposed before being seen. Of this group there were 63 negative skin tests and nothing was done to them. Of the 62 positive 52 were immunized with the toxin, i. e., the filtrate, while 10 who showed streptococcus hemolyticus were given convalescent serum. Not one developed the disease.

Seven of a control series of 32 to whom nothing had been done contracted the malady.

The Drs. Dick deserve the plaudits of the profession and the world for the work they have carried to such a successful conclusion.

The time is at hand when if all the weapons in the hands of the modern medical profession were used to their fullest capacity for the prevention of disease most if not quite all of the contagious diseases with which we have to deal, could be wiped out.

QUININE UREA INJECTION IN SCIATICA

A. E. Hertzler states in the American Journal of Surgery, xxxviii, 4 p. 84, 1924, that he greatly favors treatment of sciatica with a solution of 1 per cent quinine and urea hydrochloride. From 15 to 30 c.c. are injected into and about the nerve at the point where it lies over the neck of the femur. The position of the nerve must be carefully located, which is not always a simple matter to do. Five c.c. are injected directly into the nerve and the remainder in its immediate vicinity. After the injection has been made the patient should be kept in bed for a day or two. Recent or mild cases are usually cured by one injection. More severe cases should receive a second injection, after a week. Sometimes 4 or 5 treatments are required, at intervals of a week or two.

A CASE OF FRACTURE OF THE PELVIS

H. Winnett Orr, M. D., F. A. C. S., Lincoln, Nebr.

Four weeks ago a woman of fifty-four fell in her own garden striking hard on her left hip. She was out of hearing of the occupants of the house and only succeeded in dragging herself into the house with great difficulty. Having been helped to bed a doctor was called and he was told that she probably had a broken hip. Upon examination, however, the classical symptoms of a fracture of the neck of the femur were found to be absent. The limb was not very carefully measured for length and no x-ray examination was made. After a day or two she seemed to be getting better and she was told that she could get up and begin to walk. This, however, she was unable to do. After a week I was called, and at once agreed that she did not have a fracture of the neck of the femur. Measurements showed, however, that the leg on the injured side was more than an inch short. Pain was complained of chiefly in the groin and the inner upper side of the thigh. The patient was taken at once to the hospital for an x-ray examination and necessary treatment. As I had suspected a fracture of the pelvis was discovered.

The fracture line extended through the outer portions of the pubis and the ischium and involved the acetabulum. There was an inward and upward displacement of the fragments and of the entire hip joint.

It is quite important in these injuries, as in most other fracturers, to secure reposition of the fragments and to maintain this position during the entire period of healing. Wide abduction and traction (Whitman position) are essential because they give just the kind of pull on the attached ligaments that will draw the injured parts of the pelvis into correct position. Fixed traction in a cast is the best method for maintaining length, and, finally a double spica cast is required to immobilize the pelvis. Accordingly the patient was anesthetized on a Hawley table and exactly the above was accomplished. Our technic in such cases is as following:

The traction is applied when the fracture is reduced and so immobilized or fixed in immobilizing apparatus that it and the fractured extremity remain undisturbed and unaltered until at least preliminary healing has taken place. The exact technic as employed by us is the following:

Moleskin adhesive traction straps are applied to the limb, 3 inches wide and varing in length for fractures of the leg or thigh. The frayed ends of a strong, pliable rope are sewed into the distal ends of the straps to be used for traction purposes. The straps are applied to both sides of the limb well up to the site of the fracture and bandaged into place with muslin bandage.

The patient is anesthetized on a fracture table; traction is instituted by a muslin bandage about the foot and the rope ends are attached to the traction device by which a pull is made and continued until the limbs are of equal length. The cast is applied in the usual manner, as far down on the extremity as the ankle. After the plaster is sufficiently set, traction having been continuously maintained by the foot bandage, the traction straps are cut off from the holding device, turned back against the leg portion of the cast, and embedded in the cast by several turns of plaster bandage, thus anchoring them and maintaining traction. When the plaster is set, the muslin bandage anchoring the foot is removed, and the foot wrapped with sheetwadding, and a cast applied with the foot at a right angle to the leg.

X-ray now, after three weeks, shows the fragments in perfect position and the patient is asking to be transferred from the hospital to her home. With the possible exception of the combined Thomas splint and Balkan frame no other treatment could approximate this in efficiency and comfort for the patient, and with such treatment transfer of the patient could not be thought of.

Now after three weeks the patient's condition as to the fracture and as to her general condition is very interesting. She has had no pain since the first few days. Narcotics have not been required. She has been turned on her face, without disturbing our fixation, twice daily and there has been no sign of a bed sore or any other complication.

Complete recovery and ability to be up and walk about may be expected by this method in 8 to 12 weeks. A similar patient who was caught under a falling pole has just walked out of the hospital at the end of nine weeks.

OVARIAN THERAPY

Emil Novak, Baltimore (Journal A. M. A., Dec. 20, 1924), emphasizes the fact that, rational as ovarian therapy appears to be in some conditions, the results are rarely striking and often nil to the level-headed observer. It cannot be assumed that a commercial extract can replace the normal ovarian secretion in the patient's body, or, for that matter, that it originally contains any of the active hormones of the ovary. Here lies the crux of the whole problem, whose solution will depend in large measure on the work of the biochemist. Until this day, the physician who uses ovarian therapy should keep his feet on the ground and not let himself be carried away by the exaggerated claims of those who have something to sell or the ill advised and premature reports of honest but deluded professional colleagues who have not yet learned the dangers lurking in the "post hoc propter hoc" method of reasoning. As I once heard a wise man say, "Ought we to assume, if the administration of cascara relieves constipation, that the constipated individual had been a victim of hypocascarism?" There can be little question as to the future importance of ovarian therapy — as regards its present importance there is considerable room for discussion

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
1012 Terminal Building, Lincoln, Nebraska.

F. A. Long, M. D., Editor..........Madison, Neb.
R. B. Adams, M. D., Associate and Business Manager..........Lincoln, Neb.
1012 Terminal Building, Lincoln, Neb. Tele. B2625.

COMMITTEE ON JOURNAL AND PUBLICATION.
F. A. Long, Chairman..........Madison
W. O. Bridges..........Omaha
B. F. Bailey..........Lincoln
R. B. Adams, Ex officio..........Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewriten, double-spaced, not the carbon, submitted.

Reprints should be ordered from the printer, The Huse Publishing Co., Norfolk, Neb.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. X May No. 5

LINCOLN, MAY 12, 13, 14

The time for the Annual Meeting is almost at hand. The programme seems to be unusually well proportioned, between the metropolitan cities and rural Nebraska; so varied that every one should be pleased.

Dry clinics are to be the feature the first morning.

Dr. William Engelbach, professor of medicine, St. Louis University, Dr. Lee Wallace Dean, Dean of the Iowa University College of Medicine and professor of ophthalmology and otolaryngology, and Dr. W. J. Cramp, Chicago, who is to speak to a lay meeting on "Quacks and Nostrums", are to be the guests of honor. Much may be expected from these distinguished guests. A splendid entertainment program also has been provided. Surely these features should furnish something worth while to every one.

An innovation at this meeting will be a floor manager who will see to it that the essayists are lined up when their turns come and conserve time.

Due to the fullness of the program, discussion will be limited to three minutes and must be prompt.

If former meetings have not been entirely to your liking, it is your duty to help make them better. Constructive work, not sulking and fault-finding make for success.

Time and money spent attending annual meetings is time and money well spent—not lost. The man who remains at home is the looser.

The most successful men in the profession say they learn something from every paper, from every discussion and from meeting face to face the men of the profession. Surely there must be something for us humbler ones.

When you go to the meeting mix with the crowd and make a modest effort to meet and be met by others. Half of the pleasure and profit of the meeting is in meeting the "other fellow" and getting his viewpoint.

Perhaps even the chairman will remember that we are all sociable creatures and will declare a five minute recess for the purpose of handshaking and greeting the fellows of the Association.

A never-to-be-forgotten welcome was that accorded to about twenty newly-elected members at the 1888 meeting at Lincoln, when the secretary, then Dr. A. S. v. Mansfelde, came from the secretary's desk to the rear of the federal court room and said "I want to greet these young members" and did so with a hearty and generous handshake. Among those new members were "youngsters" like Dr. A. F. Jonas, Dr. F. S. Owen, Dr. J. S. Devries and the editor. At least one of those young members has never forgotten that welcome. It made us at once feel that we were among friends and seemed to place us on an equality with the older members.

PERTINENT QUESTIONS

Doctor: What reaction had you when you read the report of the Auditors regarding the finances of the State Medical Association?

Did it occur to you that the entire receipts from all sources for the Association in 1924 was six thousand and a few dollars?

Would you consider yourself a financial success in the practice of medicine and be free and unhampered in all your expenditures with a six thousand dollar gross income?

Did you have the impulse (as you should have had) to give unlimited and sincere praise to those in whose hands the finances of the Association have been so well managed, and who have builded so well with these paltry sums?

Once these questions are answered in your mind you will no doubt recall having heard and been asked both in County and State gatherings all of the following questions:

"Why does not the State Medical Association do more for us as individuals?"

"Why do we not do as other states have done and secure a paid secretary who devotes his entire time to our cause, and at whose hands great things are made possible for all of us?"

"Why does not the State Medical Association obtain a closer liaison with its component County Societies?"

"Why are our Medico-legal benefits so penurious and stringent?"

"Why does not the State Association provide a commensurate means of combating the fallacies of cultism?"

The answer to these most pertinent questions shrieks as audibly as a cry for help, and yet we turn a deaf ear and prate of what ought to be done when there is but a drop in the bucket to offer our worthy officers and committees appointed to their various tasks.

Individually and collectively we find, if we stop to think it over, that our shortcomings and petty differences most all arise from financial straits of such proportion as to totally nullify whatever attributes of good intention, endeavor, cooperation, and loyalty which we may possess thereby rendering our actions as inert as the proverbial "placebo."

Let's face the truth and give immediate and most serious consideration to the essential and ultimate raise in our annual dues at our next annual meeting at Lincoln.

"Eventually, Why Not Now?"

—C. A. Selby.

THE DEFENSE FUND NEEDS

How many members of the Nebraska State Medical Association have received such a disquieting little epistle?

Dr. George Brown,
Hague, Nebraska.
Dear Sir:

Your former patient, Chas. Watson, has retained my services to prosecute you on a malpractice basis. Unless a satisfactory settlement is promptly arranged, I will file suit and begin action against you at once.

Yours truly,
Energetic Shyster Lawyer.

Certain it is, that your Defense Committee knows of about twenty-five such cases now pending or unsettled. Just when your turn or mine will come, remains only to be seen. That the tendency of such malpractice cases to increase is certain, is evidenced not only by the number, but by the fact that our liability insurance costs have nearly dubled in the past decade.

Another evidence is that your State Medical Defense fund is more than exhausted. The very limited assessment of one dollar per year per member affords less than twelve hundred dollars as an annual fund. This is quickly exhausted by four or five cases, if the preparation for trial is adequate or if the trial is of several days' duration. Most attorneys do not charge less than fifty dollars a day, and if the trial lasts a week, three or four hundred dollars is quickly used. You may say that this is excessive, but are you correctly informed? You must remember that the attorney comes to you, and even if the court sessions are short his whole day is used for no other purpose than your trial. Remember further, that a few years ago a malpractice suit did not exceed four or five thousand dollars. Now most of them are for from ten to fifty thousand dollars

Another tendency of the times, working in a psychological way against the doctor, is the following: Most men upon a jury have the feeling that the doctor should put a damaged man back in his original state of health, or be accordingly liable. This, I think is a false conception based in part on his incomplete knowledge of the employers' state compensation law. Here, an injured man must be returned to his original health or he may hold liable his employer or the insurance company that represents this employer. The average juryman is emphatically told by Mr. Shyster lawyer, that Dr. Brown has insurance, and the juryman accordingly concludes by a similar course of reasoning, that the doctor's insurance company should pay.

Speaking as a member of the Defense Committee, I want to emphasize three or four very important things gleaned from watching the many cases threatened or tried here in Nebraska. First. you cannot afford to be without adequate protection. Such tendencies as mentioned above have convinced me of this fact, and will convince you sooner or later. Second: Medical malpractice cases require for their successful defense, an attorney with special qualifications in this line. He cannot be made in a fortnight or two between the filing time of your suit and its trial. This applies even to your best personal friend who is an efficient lawyer. Twelve hundred physicians in our State Association can afford to have, and can better prepare such an attorney than is possible in any other way. Third: It is self-evident that such services cannot be retained or had without being paid for. It is the means of a livelihood for that lawyer and his children, just as your work supports your family. In my judgment, twelve hundred dollars will no longer interest the attention of such a fit man, if the number of cases remains the same. Twenty-four hundred is not enough. Three thousand, two dollars and fifty cents per member, is even likely to be inadequate some years.

Your committee has repeatedly requested the deduction of our attorney's charges. We have even protested the last bills and have the permission of your counsel to discharge him. We know full well that this is unjust to him so far as his charges are concerned. This is because he has earned every dollar charged, and in most cases successfully defended your brother member. Poverty of our medical association defense fund was our only grounds of argument for reduction of bills. The task of "Jewing" down a legitimate bill under such conditions is unpleasant and will not long be indulged in by your committee. If we are to have this very desirable service at the much needed time, we must pay for it as certainly as if it were an automobile tire or any other modern necessity.

Think this over and instruct your county delegate.

—J. S. Welch.

THE NEBRASKA STATE MEDICAL ASSOCIATION MEETINGS

In response to the query: "What suggestions have you to improve the welfare of our state society?", contained in the Questionnaire, there were many helpful suggestions. Some of them are here recorded in the hope of affording material for consideration by the officers of our society.

We read:—"Follow the example of our State Teacher's Association and have group meetings. By adopting this plan the work would be thrown more on the doctors of the respective districts and would probably elicit more interest. The meetings thus held would not be dominated by men from larger cities." "Borrow some of the special attractions used by the more successful congresses held elsewhere." "Get away from the old 'applesauce' of impressing the practitioner from the corn belt with the almightiness of the big city specialist." "Make the program more adapted to the country practitioner. Register for sections in place of expecting a man interested in surgery to attend a lecture on diseases of 'the eye'."

"Set aside one-half a day to dry clinics with a limit of ten minutes per case." "Give us more clinics and less tiresome papers." "Bring the county and local societies to a high standard of fitness and the state society will be improved accordingly." "Salaried full time secretary with duties to watch legislation, to be in close touch with local societies and to carry out the policies of our state association." "Cooperation with the A. M. A. on questions of public policy or what might be termed educational and propaganda." "Establish a state medical library similar to the one in Iowa." "Inject more out-of-state talent into our annual program." "Less politics and more fellowship." "Have meetings somewhere else than in Omaha and Lincoln occasionally."

"More thought and effort to legal defense, even at greater expense." "Continue the present editor of the Journal; repeat this Questionnaire; eliminate the House of Delegates." "Get the young men interested." "Encourage the men in the smaller communities to present clinical cases, case reports, problems peculiar to their experience; combat the rather general impression that the State Association is run by and for the men in the larger centers; promote a healthy spirit of cooperation."

"By continuing to send out questionnaries at frequent intervals. It makes us think and act a great deal more, it will have a wonderful, wholesome effect on this great fraternity because all can read the other fellows' expressions at times when the reader is in the best mood to think about those great problems."

"Cut out most of the solemn reading of so-called scientific papers. Few of us pay any attention to them. Most of us get our information from reading and not from listening to the other fellow read. This is an absurd relic of the day when the spoken work or oration was the common means of disseminating knowledge." "To have mostly papers touching general work such as most of the members do and not papers treating of rare and unique cases, such as an ordinary practitioner never sees."

"Keep up enthusiasm in the County Societies and you are going to have workers for the State Association." "Plenty of Morris Nielson's get-together and cooperation spirit." "Raise the dues so that we can amount to something financially and do the things we must now forego for lack of funds". "The usefulness of the State Association should be increased. The association should be increased. The association should have a Bureau which would make it possible to supply speakers for the public. Educational pamphlets should be printed and distributed by the Association."

"Every element and vestige of politics should be eliminated. The affairs of the Association should be so conducted as to create the unmistakable impression that the betterment of the Association and all its individual members in the consideration of the scientific subjects which come before us, is the only object for our existence."

"Sponsor a system of post-graduate study in the county societies." "Make Nebraska a bad place for the unethical practitioner." "Give more supervision to the County units." "Quit fighting among ourselves." "The more interest we give to the development of our science and the less to criticism of our fellows ,the greater will be the influence of the Association."

The above suggestions are all worthy of the consideration of every active member of our association. Some of them had been anticipated by our program committee who this year, as heretofore, repeatedly published in the Journal a request for papers. This request was particularly directed to the outstate members. The response to this request was fairly generous though not as large as desired. The Secretaries of all County Societies were requested to suggest essayists in their espective districts and where names were provided these men received a request for a paper from the secretary of the program committee. It will not be the fault of our committee on program if the out-state doctor is not recognized in the forth coming program to the degree we all desire.

A dry clinic will be held on the first half day of the meeting. Lincoln will do her part in this innovation and it is up to the personel of the association to express their appreciation by attending in goodly numbers. Dr. Camp of the A. M. A., Chicago, will speak to the lay public on Quacks and Quackery. This meeting is in charge of a committee appointed by the Lancaster County Medical Society. Dr. Camp is reputed to be an elequent and convincing speaker. For years he has had charge of the department in the Journal of the A. M. A. which has to do with the exposure of patent nostrums. So pack up your troubles in the old kit bag and come to Lincoln May 12 to 14.

—Palmer Findley.

THE ATLANTIC CITY MEETING

Annual Session of the A. M. A. at Atlantic City will be held from May 25-29. A rate of one and one-half fare on the certificate plan will be granted. Each member must secure a certificate from the agent when purchasing tickets to Atlantic City. This certificate is attested by the Secretary of the A. M. A. at Atlantic City and is then used to purchase return passage.

HIRING COMMUNITY DOCTOR

The Sharon, Kansas, plan of a community hiring a doctor by the year may work out well in smaller communities that would otherwise be without medical service. Briefly, the Sharon Health Association of 160 members agreed with Dr. E. S. Haworth, to pay him for each member $20.00 a year in two semi-annual installments. In return for these fees they receive medical service and attention from the physician without further charge except for calls made between ten p. m. and five a. m. for which one-half of the customary fee for night service is charged. Also people living beyond the six mile limit pay mileage. Cases of major surgery or hospitalization cases are not included.

EDITORIAL PARAGRAPHS

Surely, by comparison with other states, Nebraska medicine need not hide under a bushel measure.

The National Leprosarium at Carville, La., now has 236 patients. Four patients were recently discharged as cured.

With the highest powered microscopes of today one can see particles as minute as one two hundred and fifty-thousandths of an inch.

It is said that of the 142,000 full blooded Indians in the United States 30,000 are suffering from trachoma and 25,000 from tuberculosis.

We have been taught that we have normally, several times the lung capacity and the kidney capacity, that we need. The same is true of the islets of Langerhans. Their reserve supply in normal cells is enormous.

The American Society for the Control of Cancer reports that surveys from 53 states indicate that people are coming earlier to physicians and consequently with a better prospect of cure.

The hope of the diabetic in the use of insulin must rest on the possibility that the overworked islets of Langerhans, may, after a period of rest, bridged over by the administration of insulin, again resume normal function.

Sir Clifford Allbut, regius professor of physic at the University of Cambridge; said to have been the most deeply learned physician of his time died in February at the age of 88 years. He was compared with our own Osler, but was greater than Osler.

As a people, we insist on licensing boards for almost everything, even the beauty specialist; but we let so-called auto mechanics murder our cars with the utmost impunity and with nothing more than a wry face in protest when called upon to pay the bills.

One of the well known insurance companies is now considering applications for additional insurance, without medical examination, on policy holders up to forty-five years of age, in cases in which the original policy was issued by examination made within twelve months prior to the application for the new insurance.

A conference of the United States Public Health Service condemned the indiscriminate use of the word "cure" in the treatment of syphilis and recommended that instead the patient should be made to think of merely an arrested condition. Three years may be prescribed as the average period of treatment in early cases before it is placed on observation, and five years should elapse before marriage is considered.

Anaesthetizing people. whole families, with chloroform while asleep in their beds may well be considered fiction, for the possibility of such an occurrence has been pretty thoroughly disproven from time to time. Imagine enough chloroform vapor released in a room to anaesthetize the sleepers—how many gallons would it take? Would not the vapor arouse the sleeper before enough was inhaled to produce narcosis? But why endeavor to disprove an absurdity?

PROGRAMME NEBRASKA STATE MEDICAL ASSOCIATION MEETING

TUESDAY, MAY 12, 1925, 8:30 A. M.

at The Lincoln Hotel

DRY CLINICS

8:30 a. m Dr. J. M. Mayhew, Lincoln. Clinic on the Chest.

9:30 a. m. Dr. J. S. Welch, Lincoln. Some Causes of Death in Operations on the Gall Bladder and Bile Tracts.

9:30 a. m. Dr. Clarence Emerson, Lincoln. Demonstration of new Method of Dilitation of The Oesphagus in Cardio-Spasm.

10:00 a. m. Dr. A. I. McKinnon, Lincoln. Two Cases Illustrating Certain Cases of Thoracic Surgery.

10:00 a. m. Dr. K. S. J. Hohlen, Lincoln. Traumatic Epilepsy. Operation. Relief.

11:00 a. m Dr. Thos. L. Houlton, Omaha. Case Reports. Intracranial Hemorrhage. Post Mortem Findings. Lesions in The Basal Ganglia in General Paresis.

11:00 a. m. Dr. A. D. Dunn, Omaha. One Case. Defects Membraneous Bones, Exopthalmus, Diabetes Insipidous, Post Mortem Findings.

Discussion of five minutes, limited to questions only, after each report.

TUESDAY, MAY 12, 1925, 2:00 P. M.

1. Diagnosis and Treatment of Ductless Gland Dispraders, Dr. Wm. Englebach, St. Louis, Mo.
2. Hypoglosso-Facial Anastomosis for Paralysis of the Facial Nerve, Dr. A. J. Brown, Omaha.
3. Studies in Atypical Tabes Dorsalis, with Leading Points in Diagnosis, Dr. — Bennett, Omaha.
4. Ectopic Gestation, Dr. H. Melerian, Plainview.
5. Synergistic Colonic Ether in Obstetrics, Dr. W. Becker, Lincoln.
6. Heart Complications in Obstetrics, Dr. Chas. Moon, Omaha.
7. Angina Pectoris, Dr. W. W. Arrasmith, Grand Island.

WEDNESDAY, MAY, 13, 1925, 8:30 A. M.

1. Some Problems in Reconstructive Surgery, Dr. Czar Johnson, Lincoln.
2. The Dietetic Treatment of Diabetes Mellitus, Dr. F. L. Rogers, Lincoln.
3. Diabetes: Classification, Progress and Insulin Treatment, Dr. Frank Conlin, Omaha.
4. An Appreciation of Some Early Nebraska Physicians, Dr. I. S. Cutter, Omaha.
5. Primary Carcinoma of The Female Urethra, Dr. O. D. Johnson, Kearney.
6. Radium in Urology, Dr. E. E. Angle, Lincoln.
7. Prostatitis, Dr. A. D. Munger, Lincoln.

WEDNESDAY, MAY 13, 1925, 2:00 P. M.

1. Address on Surgery, Dr. J. B. Potts, Omaha.
2. Sinus Disease in Infants and Young Children, Dr. L. W. Dean, Iowa City, Ia.
3. Some Phases of the Tuberculosis Problem, Dr. John Allen, Omaha.
4. Artificial Pneumothorax in Medicine, Dr. Maurice C. Howard, Omaha.
5. Reduction of Certain Fractures by Direct Leverage, Dr. J. E. M. Thomson, Lincoln.
6. Colitis, Dr. A. Sachs, Omaha.

THURSDAY, MAY 14, 1925, 9:00 A. M.

1. Acute Appendicitis in Children, Dr. A. W. Anderson, West Point.
2. Hemophilia, An Interesting Case, Dr. A. A. Conrad, Crete.
3. Gall Bladder Disease, Dr. C. F. Andrews, Lincoln.
4. Appendo-Biliary Syndrome, Dr. Max Emmert, Omaha.
5. Some Problems in Diagnosis, Dr. A. C. Cooper, Scottsbluff.
6. How the Mortality may be Reduced in Operations on the Gall Bladder and Gall Ducts, Dr. J. E. Summers, Omaha.
7. Present Day Physical Education vs. Sound Physiological Principles, Dr. Inez Philbrick, Lincoln.

THURSDAY, MAY 14, 1925, 1:30 P. M.

1. Address on Medicine, Dr. Lucien Stark, Hartington.
2. Paget's Disease (Osteitis Deformans), Dr. F. W. Heagey, Omaha.
3. Auricular Flutter, Mechanism, Diagnosis and Treatment, Dr. A. L. Smith, Lincoln.
4. Blindness Which Could Have Been Prevented, Dr. Jas. Patton, Omaha.
5. Malignant Degeneration of a Parotid Cell Nest in the External Auditory Canal, Dr. A. F. Tyler, Omaha.
6. Adenoid, Its Shape, Structure and Mucous Glands, Lantern Slide Demonstration, Dr. H. B. Lemere, Omaha.
7. Treatment of Appendicitis by X-Ray, Dr. W. L. Ross, Omaha.

THURSDAY, MAY 14, 1925, 8:00 P. M.

Lay Meeting, Ball Room, Lincoln Hotel. Dr. W. J. Cramp of Chicago, Ill. Subject: Quacks and Nostrums. Illustrated.

HOUSE OF DELEGATES MEETINGS

May 12, 1925, 1:00 p. m.
May 13, 1925, 1:00 p. m.
May 14, 1925, 8:00 a. m.

The Council will meet immediately after the meeting of The House of Delegates on May 12 and 13th, 1925.

ENTERTAINMENT

TUESDAY, MAY 12, 1925

Complimentary banquet given by the Lincoln Chamber of Commerce to members only of The Nebraska State Medical Association, 6:30 p. m., Chamber of Commerce.

ENTERTAINMENT

The Chamber of Commerce Glee Club, Mrs. Altunus Tullis, Soloist; Roy B. Ramsey, humorist; Orchestra and others.

STATE SOCIETY OF MEDICAL WOMEN

The State Society of Medical Women will hold their annual banquet on this evening followed by a program.

GOLF TOURNAMENT

Open to members of The Nebraska State Medical Association, and to be held at the Lincoln Country Club. To be played Tuesday and Wednesday, May 12 and 13.

The tournament will not interfere with the Scientific Program.

PRIZES

Grand Prize, Silver Loving Cup. (Donated by Fenton Fleming, Jewelers).

Other prizes, Golf Shoes, Golf Clubs, Golf Balls.

For entry send check for $2.00 to Dr. Clayton Andrews, Lincoln. This charge covers green fees.

WEDNESDAY, MAY 13, 1925

Annual banquet, President's address, music and dancing.

For the ladies. Reception committee will greet and register the ladies.

TUESDAY, MAY 12, 1925

Tea at The Lincoln University Club, 3 to 5 p. m.

Theatre Party, 7:00 p. m.

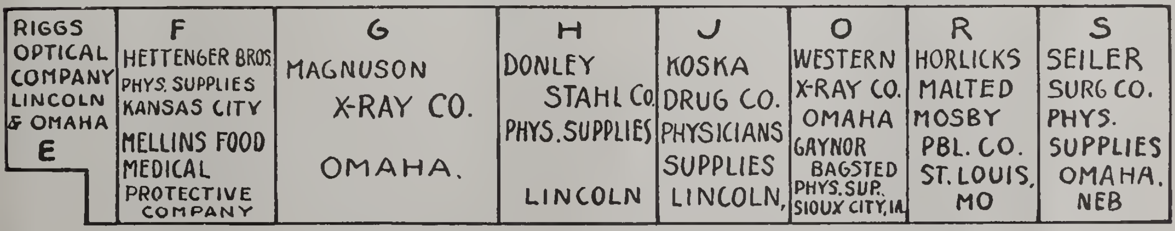
WEDNESDAY, MAY 13, 1925

Drive for the ladies who desire to tour the city, 10:30 a. m.

Lincoln Country Club, 12 to 1 p. m. Meeting of wives of members of The Nebraska State Medical Association to discuss the organization of a Nebraska State Auxiliary to The America Medical Association.

1:00 p. m. bridge and other recreation at the Country Club.

Exhibit Parlors
at the
Lincoln Hotel


RIGGS OPTICAL COMPANY LINCOLN & OMAHA
E
F
HETTENGER BROS. PHYS. SUPPLIES KANSAS CITY
MELLINS FOOD
MEDICAL PROTECTIVE COMPANY
G
MAGNUSON X-RAY CO. OMAHA.
H
DONLEY STAHL Co. PHYS. SUPPLIES LINCOLN
J
KOSKA DRUG CO. PHYSICIANS SUPPLIES LINCOLN,
O
WESTERN X-RAY CO. OMAHA
GAYNOR BAGSTED PHYS. SUP. SIOUX CITY, IA.
R
HORLICKS MALTED
MOSBY PBL. CO. ST. LOUIS, MO
S
SEILER SURG. CO. PHYS. SUPPLIES OMAHA, NEB

Nebraska State Medical
Association
Lincoln Nebraska May 12-13-14-1925

EXHIBITORS

Parlor E. Riggs Optical Co., Omaha and Lincoln.
Parlor F. Hettinger Bros., Kansas City; Mellins Food, Boston, Mass.; Medical Protective Co., Ft. Wayne, Ind.
Parlor G. Magnuson X-Ray Co., Omaha.
Parlor H. Donley-Stahl Co., Physicians' Supplies, Lincoln.
Parlor J. Kostka Drug Co., Physicians' Supplies, Lincoln.
Parlor O. Western X-Ray Co., Omaha; Gaynor Bagstad Co., Physicians' Supplies, Sioux City.
Parlor B. Horlick's Malted Milk, Racine, Wis.; Mosby Publishing Co., St. Louis.
Parlor S. Seiler Surgical Co., Omaha.

SECOND ANNUAL MEETING OF THE NEBRASKA ASSOCIATION OF MEDICAL WOMEN

MAY 12, 1925

Dinner, Grand Hotel, 6 P. M.

PROGRAM

(Ten minute papers and 3 minute discussions).

Eight Years as a Public Health Official, Dr. Martha MacVean, Nebraska City. Discussion opened by Dr. Katherine H. K. Wolfe, Lincoln.

The Uteroscope in the Diagnosis of Intrauterine Cancer, Dr. Daisy, Hanson, Lincoln. Discussion opened by Dr. Inez C. Philbrick, Lincoln.

Two Obstetrical Case Reports, Dr. Alace M. Kani, Omaha. Discussion opened by Dr. Olga Stastny, Omaha.

Dysmenorrhoea, Dr. Geno Beery, Lincoln. Discussion opened by Dr. Margaret Hammond, Lincoln.

Revised Diets in the Arthritides, Dr. Katharine Hunt, Omaha. Discussion opened by Dr. Emelia Brandt, Omaha.

Cardiac Arrhythmias, Dr. Rachel Cooper, Aurora. Discussion opened by Dr. Ruth Warren, Lincoln.

AMERICAN BOARD OF OTOLARYNGOLOGY

The next examination conducted by the American Board of Otolaryngology will be held at the Ambassador Hotel, Atlantic City, on Tuesday, May 26th, at 9 a. m.

Application blanks may be obtained from Dr. H. W. Loeb, Secretary, 1402 South Grand Boulevard, St. Louis, Missouri.

OPPORTUNITIES FOR GRADUATE MEDICAL STUDY IN NEW YORK

The Committee on Medical Education of The New York Academy of Medicine has prepared a series of synopses of approved opportunities for graduate medical study in New York City which will soon be published for distribution. The synopses cover dermatology and syphilology, obstetrics and gynecology, internal medicine, neurology and psychiatry, ophthalmology, oto-laryngology, pediatrics, surgery, urology and orthopedic surgery.

A Bureau of Clinical Information is maintained at the Academy of Medicine, 17 West 43rd Street, where detailed information is available regarding opportunities for graduate medical study in New York, and also in other cities of the United States and abroad. The Executive Secretary in charge of the Bureau is prepared to answer inquiries concerning ordinary internships, special internships or residencies, graduate courses in medical schools and teaching hospitals, and extension courses. Much information in regard to graduate medical work in England and on the Continent is on file.

The Bureau publishes a Daily Bulletin of Surgical Clinics which will be mailed free to visiting doctors on request. A Weekly Bulletin of Medical Clinics also is published. A book of the fixed clinics of Greater New York, with a transportation guide, has been prepared for the use of visitors whose stay in the city is limited, and is furnished without charge.

THE SOCIETIES

Omaha-Douglas County Medical Society

The regular meeting was held March 24, 1925.

Dr. A. J. Brown showed a movie reel of a patient who was very markedly benefited by an operation consisting of anastamosis of the hypoglossal to the facial nerve for paralysis. About twenty additional lantern slides were used to show the anatomical structures involved and to illustrate more in particular the facial appearance of this patient before and after this operation was performed. This very interesting case was discussed by Dr. W. F. Callfas who had operated on the same patient four years previously for sarcoma of the mastoid. There was further discussion by Dr. J. M. Patton, Dr. H. B. Lemere, Dr. G. Alexander Young and Dr. M. Wohl.

The second paper was read by Dr. J. E. Summers, "Cervical Sympathectomy". The doctor's remarks were beautifully illustrated by excellent lantern slides, showing the steps of this operation. Dr. G. A. Young discussed this operative procedure in the treatment of epilepsy.

Dr. A. D. Dunn discussed the question of angina pectoris and its treatment by cervical sympathectomy.

Dr. M. C. Howard related his experiences in the clinic of Dr. Hofer in Vienna, where 17 cases of angina pectoris were treated by this surgical procedure, 9 cases were practically entirely relieved of pain.

Dr. A. F. Jonas showed how the doctor could learn to contort his face and inspire the patient to train the muscles to perform the same feats if the patient was persistent enough in his efforts.

—Earl C. Sage, Sec.

Lancaster County Medical Society

Regular meeting March 21, Vice-President Dr. H. H. Waite in the chair.

In the call for clinical cases:

Dr. Carl Kail reported a case wherein there was a calcification in the breast. This calcified area in the breast simulated in the Roentgenogram a calcified area in the lungs. He spoke on the differential points in establishing this area outside of the lung.

Dr. A. D. Munger reported a case of organic stricture in the penile urethra in a boy 14 yrs. of age. The stricture was apparently self induced by insertion of foreign bodies in the urethra over a period of several years for pleasurable purposes.

The first paper of the evening was presented by Dr. Carl Kail entitled "Retro-Colic Appendix." Because of the difficulty of demonstrating a retro-colic appendix by the usual signs, diagnosis usually has to be made by eliminating other conditions which may give rise to similar symptoms. If there is tenderness along ascending colon and over the cecum and other conditions which might give the same symptoms are eliminated, we are justified in making a diagnosis of retro-colic appendix.

"1.—I wish to impress the fact taht a thorough examination is very necessary. 2.—That retro-colic appendices are usually found in patients with a high cecum and transverse colon which accounts for the absence of demonstrable adhesions. 3.—That it is often impossible to differentiate retro-colic appendix from gastric or duodenal ulcer, gall bladder disease and stone in the kidney without a complete x-ray examination which takes 24 to 48 hrs." Dr. Emerson opened the discussion with a plea for more conservatism in the diagnosis of chronic appendicitis. The paper was further variously discussed from the standpoint of physical findings in contrast to x-ray findings. Second paper of the evening was read by Dr. Katherine H. K. Wolfe entitled "A Constructive Program for the Prevention and Care of Tuberculosis in Children." The doctor presented a statistical report based on her work among the school children relative to the incidence, diagnosis and method of handling tuberculosis in the schools. The paper revealed the fact that there is a considerably higher percentage of active tuberculosis among children than among adults. A plea was made for adequate open air rooms in the schools. The doctor presented an outline for the establishment of a "preventorium" for these potentially tuberculosis children.

The discussion of the paper brought forth a general commendatory expression for the work Dr. Wolfe is doing among the school children of Lincoln.

Regular meeting held April 4, at the Orthopedic Hospital, was called to order by the president. In the call for clinical cases Dr. Covey reported:

CASE I

Single woman, 42 years of age, who presented herself with a history of sudden uterine hemorrhage following her menses. There was bleeding from the gums and nose. The physical examination was essentially negative. Her blood picture was that of an essential purpura hemorrhagica. She had multiple transfusions and calcium chloride intravenously as pre-operative preparation for splenectomy. Two days following the splenectomy the patient died.

CASE NO. II

Dr. Hilton reported a case of primary carcinoma of the fundus of the uterus.

CASE NO. III

Dr. Mayhew reported three cases from his service at the Lincoln General Hospital.

(a) "Poorly nourished woman of 62. Mother of 5 children, all living.

No serious illness up to five years ago when arthritis developed in numerous joints. All teeth removed at that time. Thirty days later tonsils removed. In bed two months with occasional temperature and remissions of joint pains. Her wrists are now fairly well fixed and she shows chronic inflammatory bursitis of left knee with some stiffness. Three months ago felt loss of strength and noticed loss of weight. Before this pallor noted by family. Strength decreased rapidly and two months ago went to bed where she has remained. She complains now of great exhaustion, loss of appetite and inability to retain food. There is pain after eating. Examination: Head, sinuses, throat and teeth negative. Chest negative except for hemic murmur well accentuated over the pulmonary area. Blood pressure 102 systolic, 92 diastolic. Pulse pressure 10. Abdomen: Fluid obvious. Liver margin easily felt, hard and firm three inches below costal margin. It is also very hard and firm. Urine shows only slight trace of albumin with few hyaline casts. The K. F. Phenol-Sulphone-Phthalein method is 56% in two hours. There is edema of labia and extremeties. The pelvis is negative. Blood picture. White blood count 5200, lymphocytes about 40%. Red blood cells 2,290,000, all irregular forms present. A few normo blasts present. Hemoglobin 58%. Blood platelets 92,000. The Wassermann was negative. Stools showed occult blood. There were no parasites or ova present. Blood culture negative. X-ray of gastro-intestinal tract negative."

(b) This case is almost identical in age incidence and physical findings with the one reported in detail.

"The liver is not so large, in fact, is the contracted arrhotic type. There was present the pathologically difuse febrosis of the spleen. There was fluid in both flanks. There were no nucleated red cells present in the two smears examined by me. The blood platelets were about 100,000. The hemoglobin index was 2.2%. There is no history of gastric hemorrhage. The Wassermann was negative."

"In 1883 Banti first described an enlargement of the spleen accompanied by atrophic cirrhosis of the liver of the Laennec type. The relation of splenic anaemia to Banti syndrome is most interesting. The majority of clinicians, I believe, agree with Moschcowitz in the conclusion that there is no real difference between the two and that Banti's disease is merely a late phase of some cases of splenic anaemia. It is certainly true that a considerable percentage of cases of splenic anaemia in the later stages will be found to be associated with portal cirrhosis of the liver, but not always of the atrophic type; the liver is as frequently enlarged as contracted. On the other hand, some observers believe that all cases of this description are primarily portal cirrhosis and later stages, it is difficult, if not impossible, to determine whether it was primarily portal cirrhosis with secondary splenic manifestations, or primarily splenic anaemia."

(c) "A man, garage mechanician, 36 years of age, was taken ill with vomiting and acute abdominal pain twelve weeks previously. Jaundice rapidly supervened. There was history of three previous attacks of jaundice with gastric crises. Examination showed a poorly nourished man with an icterus that stood out vividly. The features of note were normally colored feces, absence of bile in the urine, enlarged spleen and liver, gall bladder pain, abdominal distention and the blood picture. This latter showed a hemolytic change in the red cells that was identical with the so-called pernicious anemeas—with the exception of high color index and nucleated reds. The man was constantly nauseated but had not vomited. There was no evidence of hemorrhage. A few days after I saw him he went into shock and died in twelve hours. His form of death was cardio-respiratory and the presumption is hemorrhage. In my opinion this was a case of hemolytic icterus. No autopsy could be obtained.

The triumph of splenectomy is the cure of hemolytic icterus. We have had no more satisfactory results in surgery than are to be found in this group of cases. Only patients in a terminal condition with secondary gall stones and cirrhosis of the liver fail to be relieved. The only patient lost at the Mayo clinic of the twenty-seven splenectomized for hemolytic icterus was one operated on during an acute exacerbation. Crises are a part of the picture of the disease, and when severe have usually been due to gall stones, although it is undoubtedly true that exacerbations do take place from unknown causes in which there is a great but temporary increase of jaundice, with tenderness and increased tumefaction of the spleen and usually of the liver, without gall stones. On gross section the spleen in hemolytic icterus is dark, mottled, filled with blood pigments, and quite distinct from the spleens which have been removed for other conditions. This patient was in a terminal condition when seen, so splenectomy was not advised.

The two hemolytic cases with liver cirrhosis and enlarged fibrotic spleens have been advised to have splenectomy performed. They must be prepared by blood transfusions which in these two cases must be of whole blood on account of low platelet counts. The prognosis in these cases is dependent altogether on the effect of the transfusions."

CASE NO. IV

Dr. Waite reported the pathological findings in a teratoid tumor of the ovary. The tumor was about half the size of a hen's egg. Within there was hair and a rudimentary fallopian tube.

The first paper of the evening was presented by Dr. Van Es of the University of Nebraska College of Agriculture entitled "Some Host Relations of the Tubercle Bacillus." The essayist prefaced his presentation by a very interesting historical discussion of the scientific study of the tubercle bacillus. He set forth the tubercle bacilli are of one specific species but subject to mutation in the various hosts. Because of this mutation three distinct varieties of the organisms are recognized. (1) Human type. (2) Bovine type. (3) Avian type. In the recognition of these various types the doctor outlined the differential characteristics upon artificial cultivation and inoculation. The different varieties almost always behave according to type when injected into the specific animal or bird. The human type is only mildly pathogenic for the rabbit. The avian type not pathogenic for the guinea-pig, only slightly so for the rabbit but absolute in the fowl. Fowls are resistant to the mammalian types. The essayist felt that the possibility of human infection by the avian type of bacillus has been overlooked. At this juncture Dr. Van Es presented an interesting description of meat inspection in the packing houses.

The second paper of the evening was presented by Dr. Everett Angle entitled "Recent Studies in Urology". The doctor presented a very interesting series of pyelograms obtained from his service at the New York Hospital. In presenting the various types of renal pathology Dr. Angle very lucidly pointed out the differential characteristics necessary for a proper pyelographic interpretation.

—Arbor D. Munger, Sec.

The regular meeting of the **Eleventh Councilor District Medical Society** was held at the American Cafe, Ogallala, March 9th. Following the banquet officers were elected for the ensuing year. Dr. J. B. Redfield, North Platte, president; Dr. C. F. Heider, Sutherland, secretary-treasurer.

Report of the State Councilor meeting was given by Dr. C. A. Selby, councilor, North Platte, at which time he read a paper on Publicity adopted by the State committee on publicity. Dr. J. B. Redfield, North Platte, read a paper on Indications for Caesarian Section. The field of Physiotherapy was covered by Dr. T. J. Kerr, of North Platte. George Junge, Esq., Ogallala, discussed the possibility of methods of dealing with the deadbeat, by establishing some form of collection agency or rating bureau for the doctors in the various districts.

Doctors present at the meeting were, Selby, Kerr, Redfield, Wilcox, Walker, North Platte; Vandiver, Pitts, Wallingsford, Ogallala; Bell, Grant; Heider, Sutherland.

—C. F. Heider, Sec.

The Merrick County Medical Society at a meeting about the first of April had the following program: Dr. A. C. Hull, Omaha, "Head Injuries"; Dr. George Pratt, Omaha, "Auricular Fibrillation"; Dr. L. E. Moon, Omaha, presented a moving picture demonstration of a "Hemorrhoidectomy, Under Local Anaesthesia."

HUMAN INTEREST TALES

Dr. G. E. Hart has moved from Gurley to Sidney.

Agitation for a hospital at Loup City is under way.

Dr. Albert Lynch was chosen mayor of Fairbury at the spring election.

Dr. Albert A. Lowenthal, Chicago alienist, spoke to Omaha doctors, March 16th.

The marriage, April 2nd, of Dr. H. N. Morrow and Miss May Oberg, Fremont, is announced.

Dr. A. D. Dunn spoke on "Choosing a Doctor" to the Professional Men's Club, Omaha, recently.

The Oakland physicians entertained the Burt County Medical Society the last part of March.

A charge of selling narcotics has been filed against Dr. Lee Van Camp, county physician of Douglas county.

The Swedish Mission Hospital, Omaha, is about to expend $200,000 in the building of a hospital annex and a nurses home.

The Richardson County Medical Society recently admitted to membership a number of dentists. Why not do that in every county?

The hospital of Dr. W. E. Hillis, Syracuse, came near being destroyed by fire recently. Luckily, there were no patients in the building.

Dr. H. B. Lowry, Lincoln, nester of the Lincoln profession, has been suffering from a heart complication at a Lincoln hospital during April.

Members of the Omaha Women's Medical Society were entertained at Council Bluffs, April 3, by Drs. Harriet Hamilton and Christine Erickson Hill.

Dr. H. R. Edwards, New York City, field secretary of the National Tuberculosis Association, made a survey of conditions in Nebraska during April.

Dr. F. E. Doering, a practitioner at Kenesaw in the nineties, now and for many years a resident of British East Africa, visited at Kenesaw recently.

Dr. F. A. Long, Madison, gave a lecture before the senior class of the Nebraska University College of Medicine, on the economics of medicine, April 3d.

Dr. W. L. Shearer, Omaha, gave an address to the International School of Orthodontia and also an address to the graduating class at Kansas City, April 2nd.

In honor of the women seniors of the University of Nebraska College of Medicine, Mrs. G. Alexander Young and Mrs. Elmer Porter entertained, April 18th.

Dr. F. Vennamann and nurse, Lynch, suffered serious and painful injuries when the auto in which they were returning from a trip overturned and was wrecked.

Dr. John Ridlon, Chicago, and Dr. Arthur Steindler, Iowa City, noted orthopedic surgeons, visited the State Orthopedic hospital and gave clinical lectures early in April.

Dr. F. J. Wearne, Omaha, received rather rough treatment from two prohibition agents who insisted on searching him on his return from the golf grounds with a parcel of soiled linen. All they found was soiled linen.

By a directed verdict Dr. Clyde Roeder, Omaha, won the malpractice suit against him for $86,000. The court also directed the plaintiff to pay Dr. Roeder's court costs amounting to $250.00.

Dr. H. M. Evans of the University of California gave a lecture before the students of the Nebraska University College of Medicine on the "Relation between Fertility and Nutrition", April 1st.

Dr. S. B. MacDairmid, Omaha, president of the "Ad-Sell" league for the past several years, has made an enviable record, having procured 336 new members for the club in the last three years.

A half dozen doctors in Omaha have been robbed recently. Instrument bags were taken from several doctors' automobiles, offices were entered and money, medicines, instruments and narcotics taken.

Dr. E. C. Henry and Dr. Ernest Kelly, Omaha, were guests of the Page County, Iowa, Medical Society recently, the former speaking on "Brain Surgery" and the latter of "Neurologic Diagnosis".

Comes now an Omaha attorney, apparently dry in his throat, who is willing to try the constitutionality of the Nebraska prohibition act against prescribing liquor for medicinal purposes, in the courts of this state.

An epochal Iowa medical assembly of mid-western medical leaders in a diagnostic clinic under the auspices of the Twin Lakes District Medical Society is announced to take place at Twin Lakes, Rockwell City, Iowa, July 16th. Light is promised on practitioner's problems, internal medicine, diseases of the skin, the eye, gynecology, laryngology, pediatrics.

The Medical Women's Club of Lincoln gave a dinner in honor of Dr. Katharine H. K. Wolfe, in recognition of her seven years of devoted service in the interests of the health of the children in the Lincoln Public Schools, March 19th. Dr. Wolfe has accomplished a remarkable piece of health work in seven years, and the appreciation of the citizens of Lincoln was shown by the presence at the banquet of ninety-five people and by the character of the speakers and addresses given.

NECROLOGY

Charles W. Jester, Bethany, Nebr; Lincoln Medical College, 1904; for a number of years a practitioner at Doniphan, died in a Lincoln hospital from cerebral hemorrhage, April 1st, aged 59 years. A son, Dr. Royal F. Jester, is a practitioner at Doniphan.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1924

Cloth. Price, postpaid $1.00. Pp 82. Chicago: American Medical Association, 1925.

This volume contains the reports of the Council on Pharmacy and Chemistry that have been adopted and authorized for publication during 1924. Some of these reports have appeared in The Journal of The American Medical Association. Others are now published for the first time.

The annual volumes of the "Council Reports" may be looked on as the companion volumnes to New and Nonofficial Remedies. While the latter contains the medicinal preparations that are found acceptable, the reports contain the reasons why certain products were not accepted. Thus the present volume contains reports on the following products which the Council denied admission to New and Nonofficial Remedies: Aolan; Aspatol; Atussin, Peptoproteasi, Paraganglina Vassale, Fosfoplasmina, Asmoganglina and Endo-Ovarina Tablets; Borosodine; Carsinol; Colodine and Colobromidine; Ferrasin; Glyeuthymenol; Hoyt's Gluten Flakes; Iodeol; Loeflund's Food Maltose; Mistura Creosote Comp. (Killgore's) and Tablets Cascara Comp. (Killgore's); Neo-Riodine; Nicomors; Peptone Solution for Hypodermatic Use (Armour); Pixalbol; "P-O-4"; Pollantin; Promonta; Pruritus Vaccine Treatment-Lederle (Montague Method); Restor-Vin; Some "Mixed" Vaccines of G. H. Sherman and Tersul Hiller.

The volume also contains reports on products which were included in former editions of New and Nonofficial Remedies but which will not appear in the 1925 edition because they were found ineligible for further recognition. Among these are polyvalent antipneumococcic serum, colon bacillus vaccine, gonococcus serum and gonococcus vaccine.

The volume contains a number of reports of a general nature: for instance a report on the therapeutic value of benzyl benzoate; a report on anaphylaxis produced by hromboplastic substances and a report on the therapeutic use of digitalis.

Physicians who keep fully informed in regard to the value of proprietary remedies will wish to own this book.

THE FIRST TYPEWRITER

The first patent for the foundation of all the key typewriting machines was taken out by Thomas Hall on June 18, 1867.

The Remington Company issues a pamphlet that states that after many attempts since 1714, the first practical machine was completed by C. Latham Sholes, Samuel W. Soule and James Densmore and put on the market in 1874.

MAINTAINING LENGTH AND POSITION IN THE TREATMENT OF COMPOUND FRACTURES

The importance of maintaining length and position in the treatment of compound fractures is stressed by H. Winnett Orr and J. E. M. Thomson, Lincoln, Neb (Journal A. M. A., Nov. 1, 1924). Ordinarily compound fractures are but puncture wounds, and, after careful cleansing, can be reduced by methods applied to simple fractures and, if kept absolutely at rest in plaster casts or splints, they can be treated as simple fractures. Should infection occur, drainage can be established through a window in the cast without disturbing the bone fragments. Several lacerated and mangled injuries should be given adequate debridement at early as possible. Even in those cases in which there is extensive loss of bone, full length of the limb can be maintained by fixed traction. Later, when healing has occurred, a bone graft can be supplied to fill in a gap if one exists without loss in the length of the extremity. The exact technic as employed is as follows. For compound fractures of the lower extremity, moleskin adhesive plaster traction straps are used. The frayed ends of a strong, pliable rope are sewed into the distal end of the straps which are applied to both sides of the limb well up to the site of fracture, and bandaged into place with muslin bandages. The patient is anesthetized on a fracture table; traction is instituted by a muslin bandage about the foot, and the rope ends are attached to the traction device by which a pull is made and continued until the limbs are of equal length. The cast is applied in the usual manner, as low on the extremity as the ankle. After the plaster has sufficiently set, traction having been continuously maintained by the foot bandage, the traction ropes are cut from the holding device, turned back against the leg portion of the cast, and embedded in the cast by several turns of plaster bandage, thus anchoring them and maintaining the traction. When the plaster is set, the muslin bandage anchoring the foot is removed, and the foot is then wrapped in sheet wadding, and the cast applied with the foot at a right angle to the leg. In some instances, we have found it necessary to use ice tongs or pins applied just above the condyles of the femur, at the ankle or through the heel. This may be done at any time when the fracture is near the joint, and when it is difficult to maintain traction and position by other means. We do not use the pin in the ankle, but in several cases have put it through the os calcis. We merely embed the pin or tongs in the cast, thus fixing the constant pull of the appliance, and securing the lower fragment in correct rotation. This is a method of greatest importance in those cases in which exact position as to rotation, eversion or inversion of the foot or lower fragments is difficult to secure or maintain. Such exact position can be secured and accurately maintained by manual control of the ice tongs or pin until it is "frozen" into the cast in just the position desired as to length and rotation. Ice tongs and pins are often the only devices that will give this kind of control in compound fractures. Attempts to secure such control by the insertion of bone grafts, plates, screws, wire, etc., into an infected field can be mentioned only to be condemned. They found cases in which, after full length was accomplished, exact apposition of the fragments could not be obtained by traction alone. Direct leverage applied to the fragments with an instrument has given splendid position. Compound fractures of the humerus are treated in a body arm spica with the flexed forearm used for traction, the countertraction being established against the shoulder. Forearm fractures are placed in plaster from the finger tips to the axilla, the forearm flexed to 90 degrees in semisupination and the hand in dorsiflexion, traction being maintained through the flexed elbow against the biceps portion of the arm and the dorsoflexed hand. The wound is cleaned up or debrided, filled lightly with a petrolatum gauze pack, and is covered under the cast with a dry, sterile pad. Unless there is marked rise in temperature, the wound remains untouched for from two to six weeks, at which time a window is made over the wound, and the first dressing is removed. During this procedure, the position of the fragments is undisturbed.

What drugs in the entire pharmacopoeia can compare with thyroid extract, insulin, adrenalin, and pituitrin? Very few — digitalis in auricular fibrillation, opium and its derivatives for pain; mercury, salvarsan, quinine, and ipecac (emetin) as bactericidal agents; an antitoxin or two, a serum or two, and a few other drugs, perhaps. Shall we discard the remainder because they are not brilliant specifics? Most of us lack patience in our therapeutic efforts. We expect striking results in a week or two.

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, June, 1925 No. 6

CONTENTS

Page
Medical Education and the Family Doctor, Palmer Findley, M. D., F. A. C. S. 193
The Epidemiology of Streptococcus Sore Throat, J. Jay Keegan, M. D. 200
Oral Focal Infections Related to Systemic and Degenerative Diseases, L. J. Swanbom, D. D. S. 203
Modern Aspects of Nutrition. 4. Faulty Food with Reference to Energy Metabolism — Continued, Victor E. Levine, M. A., Ph. D. 208
Poliomyelitis from the Standpoint of the Neurologist, George E. Neuhaus, M. D., F. A. C. P. 211
Carcinoma of the Vulva, Max Emmert, M. D., F. A. C. S. 216
The Surgeon's Relation to the Newspaper, J. W. Duncan, M. D., F. A. C. S. 218
Group Practice in the Smaller Communities, D. D. King, M. D. 220
Fractures of the Lower Third of the Leg, J. E. M. Thomson, M. D., F. A. C. S. 222
Unusual Menstrual History in Three Generations, L. J. Owen, M. D. 224

Page
EDITORIALS—
The Nineteen Twenty-five, Lincoln Session 226
The Drift of Doctors in Nebraska 227
State or Private Laboratory 227
Congress of Medical Councils in Chicago, March, 1925 229
Wilson and Cochran's Fractures and Dislocations 229
Clinical Features of Heart Disease 231
The State Bureau of Health Notes 231
Editorial Paragraphs 231
Limitations of Intraglandular Injections for Goiter 233
Summary of Activities, University Hospital for 1924 233
Women's Auxiliary, Nebraska State Medical Association 233
Nebraska Vital Statistics for 1924 234
Alpha Omega Alpha Honors 234
The Societies 234
Human Interest Tales 235
Necrology 236

MEDICAL EDUCATION AND THE FAMILY DOCTOR*

Palmer Findley, M. D., F. A. C. S., President Nebraska State Medical Association,
Omaha, Nebr.

In holding a brief for the family doctor I confess that I am endeavoring to uphold a tradition in my own family, for the mantle of Esculapius was bequeathed me by my father who was a doctor of the old school. In the late fifties he came into western Iowa after studying for two years under a preceptor. His territory stretched for fifty miles in all directions and he carried his equipment in saddlebags. For forty-seven years he served his community in the fear of God and to the best of his ability.

The family doctor is passing with the horse, and why? To my mind the answer lies, in no small part, in our modern methods of education. I realize that I am not in an enviable position when I make bold to oppose a forward movement and particularly along intellectual lines. The words of Coleridge come to me: "Truth is a good dog, but beware of barking too close to the heels of an error, lest you get your brains kicked out."

We rejoice in the progress made in medical education in the last decade. We would not be understood as decrying technical training, the furthering of research and the development of specialization in medicine. But if all this is to result in the effacement of the family doctor then we say medical education has over-shot the mark. There can be no substitute for the doctor in the home. Specialists and clinics are all very well in their places, but they cannot take the place of the family doctor.

Under the leadership of the president of the American Medical Association a mighty protest has sprung up all over our land—a protest against the trend in medical education toward the lengthening of the premedical and medical years of training and to the overemphasising of pure science at the expense of a practical training that would best prepare students for the practice of medicine. It is contended that the poor boy can no longer look forward to a medical career because of the high cost of training; that the courses both in the premedical and medical years are so exacting in time and money and effort as to make it all but impossible for a poor boy to carry the ever-increasing load without sacrificing his health.

---

*Presidential Address, delivered before the annual meeting of the Nebraska State Medical Association, Lincoln, May 12-14, 1925.

The National Educational Board of the Carnegie Foundation and the Council of Medical Education of the American Medical Association have joined hands in the past ten years in a most praiseworthy effort to improve educational methods in the United States, and they have succeeded to a marked degree. They have halved the number of schools, thereby eliminating most of the unfit, as well as some that were serving a useful and honorable purpose. They have standardized the existing medical schools until now seventy of the remaining eighty schools are in class A. This process of elmination was effected by demanding that all accredited schools must have adequate laboratory equipment, supervised by full time instructors; that a sufficient number of hospital beds shall be controlled by the institution to provide adequate clinical teaching; that the premedical years shall be not less than four in an accredited high school and two in a college. And finally that the medical course shall be of four years. Moreover many schools are now requiring a fifth year in a hospital before granting the degree of Doctor of Medicine.

No other profession has approached these demands. And what is the net result? Medical colleges that were dependent upon fees paid by the students for their support closed their doors and the effect upon the student body and upon the public at large presents a problem that is challenging the serious consideration of medical educators and the medical profession.

The high cost in money, in time and effort of a modern medical education is developing an aristocracy of medicine. The student who has put not less than eleven years into a medical education from the time he left the grammar school; who has spent no less than $10,000 to $12,000, and who has been led to believe that the practice of modern medicine demands a very expensive and elaborate laboratory equipment will not go into the rural districts, or if he does he will not stay there long. Instead he locates in the cities, not with the intention of engaging in family practice, but to become a specialist.

Dr. H. C. Wood, Jr., of Philadelphia says:

> "I have been a teacher for more than twenty-five years, and for several years back have had a growing sense of the amount of time wasted in useless detail, especially in the fundamental sciences of the medical curriculum. I see a strong analogy to the situation a few centuries ago, when the leaders of medicine were so dominated by the theories of Galen that Harvey's immortal work was not allowed to be published in England".

J. F. Baldwin of Columbus, Ohio, tells us:

> "Those of us who have been quietly watching the constant additions made to our curricula, may well suspect that we may have been playing the fool with the times and that 'the spirits of the wise sit in the clouds and mock us'."

Deaver of The University of Pennsylvania says:

> "That, after all, medicine is only about one-tenth science, the other nine-tenths being art, to be acquired by wide experience in the work, in the college, in the hospital and particularly at the bedside".

John A. Witherspoon of Tennessee finds no place for the specialist or the research man, in the strict sense of research, in the undergraduate school. He says:

> "If a medical school has any real function, it is to turn out medical men who will take care of the women and children of this country; and we are not teaching medicine today that is making them fit for such work. Those who practice in communities as I do, and who teach in communities as I do, know that it is impossible, nearly, to get a student to go out into any of the rural communities and practice medicine. Why? Not always because the roads are bad; not always because his pay is not good, but simply because his teaching has made him feel that he cannot practice medicine unless he is within a laboratory or under a hospital roof".

Samuel Lambert, of New York, has this to say:

> "The modern education of the physician lays undue stress on the laboratory in diagnosis, and neglects the study of the symptomatology of the onset and course of a disease. The teaching of older clinicians has been forgotten in the worship of faithless idols, and the present day is searching for specifics to cure and for easy short cuts to diagnosis. The physician of today has forgotten that typhoid fever and pox were well known and diagnosticable long before Widal and Wassermann were born and before the causative germs of these diseases were discovered".

Dr. Nicholas Murray Butler says:

> "Medical teaching is the spoiled child of education" and adds that "Medical education is about a half century behind the other forms of high instruction".

The need for practitioners in the rural districts is manifest and will become acute in the near future unless some remedy is found. The average age of the rural doctor is said to be 52, which means that young men are not coming in to take the place of the old. Doctors are being subsidized to go into these communities through a guarantee of a definite minimum income. Nature abhors a vacuum; the Council of Medical Education has created a vacuum and the Cultist is now occupying it. And we ask — are the farmers and small townspeople to be left with the midwife and the cultist or will State Medicine step in, and dispensaries be established, in these communities at the expense of the tax payers? I do not know, but this much I do know: The demands of modern medical education are excessive for the needs of the general practitioner and should be lessened and made more practical. I agree with Pusey that a four years high school course, which includes two years of Latin, four years of English, one year each of Chemistry, Physics and Biology and three years of Mathematics plus a year or two of history is sufficient preparation for the study of medicine. Is this not more preparation than many of the men of medicine got who are today our leaders in medical education, medical research and in the practice of medicine? I believe with Pusey that four years of medicine, which includes a year in the hospital, will suffice for the training of a general practitioner. And I believe that by concentrating upon worth-while subjects the student, who is preparing for family practice, will accomplish more than he is now accomplishing in his six years of schooling and one year of hospital service following the high school course, because he will not have been burdened by so much that at best is only of scientific interest and has no bearing upon practical medicine. He will not have grown stale by the everlasting grind, but will enter his life's career with the enthusiasm and valor of youth and an inspiration to carry on through the years.

William Welsh of Johns Hopkins has said:

> "The very utmost to be expected is to give the student a fair knowledge of the principals of the fundamental subjects of medicine and the power to use the instruments and methods of his profession; to give the right attitude toward his patients and the fellow members of the profession; and above all to put him in a position to carry on the education which has only begun in the medical school".

Flexner has this to say of the clinical years:

> "Medical curricula the world over contain too many subjects as well as too much material. The burden would be heavy enough, if it were confined to the larger, original units; but within the last fifty years one specialty after another has been split off, erected into a professorship, made a subject of special teaching, and finally won a place on the examination list. Men become educated by steeping themselves thoroughly in a few subjects, not by nibbling at many. The medical curriculum cannot aim to produce physicians ready for practice; it can at best so train students that practical experience will in time mature and equip them".

Henry Prichett, president of the Carnegie Foundation for the Advancement of Teaching, has the following to say relative to needed reform:

> "Whatever agencies may undertake this task must have the courage to do two things — first, to reduce the load laid upon the student to a point where he may have time to think and to digest in some measure the studies with which he is concerned; and second, to scrap the present rigid curriculum . . . . Perhaps only a new medical school will have the courage and initiative for such a step."

Let our privately endowed institutions, such as Johns Hopkins and Harvard, go as far as they like in higher education; there is need for a few such institutions to develop specialists in the practice of medicine, authors, teachers and research workers in medical science but our State Universities and our small colleges should prepare the student for the needs of the community. Beyond these reasonable requirements for the practice of medicine let these state institutions provide opportunities for graduate students of medicine that they may prepare for special fields of activities — but only for those who so elect. In other words, maintain a minimum of requirements best suited for the needs of the general practitioner and afford unlimited opportunities for graduate work.

Haggard of Nashville, Tennessee, would first find out what the general practitioner ought to know, providing instruction as far as possible by general practitioners and establish graduate schools for the specialists.

A registrar of one of our medical schools said to me: "Our most serious problem is the elimination of medical students". To this I ventured the reply: "Would it not be more profitable to eliminate the unnecessary instruction in order that we may have more doctors who are willing to go into the rural districts and into the cities as general practitioners of medicine?"

I wanted to learn what the hard-headed practitioner of our state was thinking on this subject so I had a questionnaire sent to the entire membership of our State Medical Association and secured replies from one-third of the members. Here are some of the typical replies: "Teach less theory and more medicine". "More medicine and less laboratory technique." "Cut out the bunk". "Teach the horse-sense side of medicine". "More practical teaching by practical men". "More emphasis on the common, every-day problems". "Make a doctor, not a scientist." "Entrance requirements unnecessarily high; cut out the bunk and educate practical doctors". "Teach a good general course of medicine that a man may be able to learn before all his youth is gone and without wrecking his nervous system". "Cut out the unnecessary things that are not used in the practice of medicine and quit trying to make specialists of every student". "I believe that the student of today is taught to rely too much upon laboratory methods, so that if he enters practice in the small communities where these essentials are lacking, he is lost for a time, and must of necessity orient himself to the new conditions for which he is unprepared". Such replies as these should afford material for serious reflection by our educators. These men are thinking, and thinking clear and straight on the problems of medical education. They, themselves, have had to separate the wheat from the chaff and they are evaluating medical training in terms of service values. Many of them are in general practice in rural districts while others are specialists and some are instructors in medicine.

Let us inquire, for a moment, into the reasonableness of their statements. Is laboratory instruction unduly emphasized? I gathered a group of medical students around me and asked them to give me a sane and conservative estimate of their laboratory courses. Unstinted praise was given the courses in anatomy and pathology but chemistry and physiology were their "betes noires." Of chemistry they had taken in their premedical and medical years — inorganic chemistry, qualitative and quantitative analysis, organic chemistry, physiological chemistry, and of late a course in physical chemistry had been thrown in for good measure. All together it was estimated that about one full year was devoted to the study of chemistry and it was the consensus of opinion that not more than two per cent of the entire work in chemistry could be said to have any direct clinical bearing. Such statements seem to me to be incredible and could only be explained on the grounds that instruction was given by men who are not doctors of medicine and have a limited conception of the purpose of a medical education. Of physiology, which in my student days was a most fascinating study, because it revealed the normal functions of the human body and laid the foundation for an understanding of disordered functions which we call disease, they said the word function had never been used by the instructor and that the subject was presented as a sort of a conglomeration of most intricate chemical and physical problems, and in a manner that was most difficult to comprehend. They acquired a familiarity with frogs and turtles and learned to play on the smoke drum but when the course was ended they knew little of the functions of the liver, the kidney, the pancreas or the spleen. They had been steeped in nerve-muscle reactions but knew little of the normal processes of digestion.

In addressing the students and faculty of Yale on the occasion of the dedication of Sterling Hall of Medicine, Dr. Harvey Cushing said:

> "Let us hope that you will hold in due proportion the proper values of science courses to be taught in this hall and the practical courses in the clinics nearby, which some of us feel have of late years been over much neglected. So much neglected, in fact, that certain schools are on record as desiring only those students who are prospective medical scientists; as though, after all, there could be any higher aim than to turn out the highest type of general practitioner.
>
> "Fortunate, indeed, is the school that keeps such an even balance between the art and the science of medicine that they go hand in hand through the four years, and even though clinic and laboratory be equally represented in their allotment of time, fortunate, too, is the school in which from the onset teaching is in terms of the future patient rather than of the present frog and guinea pig. Refinement of laboratory procedure in the diagnosis of many disorders have out-stripped any possible use we may make of them in treatment and it is this art which alone tells the wise physician where scientific study must give way to, or at least be supplemented by, common sense".

It is not alone in the laboratories of the fundamental branches that the zeal of the instructor leads the student far from the straight and narrow road that leads to the development of a practitioner of medicine. Laboratory methods are stressed in the clinical years beyond any reasonable degree, judged from the standpoint of their practical application. Chemical tests, basal metabolism, the x-rays, functional tests of the liver and kidney, electrocardiograms, Wassermann tests of the blood and spinal fluid, blood cultures, cystoscopic and ophthalmic examinations — all of value in selected cases but too often displayed in the effort to impress upon the student the ideas of thoroughness and completeness in the art of diagnosis. And with what result? It is but natural that the student would accept these technical aids to diagnosis and arrive at the conclusion that without them he cannot practice modern medicine. With this thought in mind he is loath to locate in rural districts where he will be deprived of what he considers to be essential for his needs. And were he financially able to equip himself with such an elaborate array of instruments of precision the burden would be passed onto his patients, for the consumer pays the tax. And to what purpose? A medical examiner in the employ of the government tells me that he has records of 24,000 cases in which a complete clinical history was taken, followed by a thorough physical examination, and finally by the employment of all such means as the above for the checking up of his clinical findings. An analysis of the results of his findings shows that in only two per cent of all cases was any valuable information gained by the employment of laboratory methods other than an analysis of the urine and blood together with the taking of the blood pressure. Dr. Frank Billings says that he will undertake to make a diagnosis in 80 per cent of all cases by the aid of his five senses and without so much as a test tube. Would it not be wise to inquire whether we are not placing undue emphasis upon technical aids to diagnosis which too often serve no better purpose than to confound the doctor and over-tax the patient? In this connection we recall the suggestion to have "more practical teaching by practical men".

Dr. Louis Wilson of Rochester asks:

> "If it is not possible that this turning away of our students from general practice may be due, in part at least, to the fact that they never see a general practitioner in an honorable position as professor? Is it not possible that we have gone a bit too far in the teaching of undergraduates by eminent specialists?"

But what of the over-wrought student? Let one of them speak for himself as he did on the day this was written. Said he: "I am finishing my sophomore year of medicine and I am discouraged. If I knew where I could get a hundred dollar job I would quit medicine. I made good grades in my premedic course and I entered medicine with enthusiasm but it has all been taken out of me. I have brain fag, don't get enough sleep and the cost of it all is getting on my nerves. I could stand up under it all right if I thought it worth while, but what's the use of all this stuff they are loading onto us that has no place in a medical course. I thought I was through with it when I completed my course in arts and science. There isn't one of my classmates who doesn't feel the same way by the end of his sophomore year unless it is the occasional fellow who never expects to practice medicine and is preparing for teaching and research". Really, I pitied the boy. To such as he, Gray's Elegy might well have been written:

> "Chill penury repressed their noble rage,
> And froze the genial current of their soul".

When the Council of Medical Education issued the decree that an accredited medical school must employ a given number of full time instructors for laboratory courses there weren't enough men with a degree of doctor of medicine to fill the jobs and it was necessary to engage men from the departments of arts and science to give these courses and the result is just what one would expect; naturally they stress the subjects with which they are most familiar. They know not the science of medicine, much less the art of medicine.

We have the statement of the Council of Medical Education that 80 to 90 per cent of all cases could be properly cared for by the general practitioner in the office and in the home. Is it not unfortunate that the very exactions of the Council in matters pertaining to the education of doctors tends to defeat such a service? About two per cent of the graduates of Johns Hopkins are now locating in rural districts and it is quite possible that such as are there do not plan to stay longer than necessary to acquire sufficient funds to move to the city. What has happened in Johns Hopkins is happening in all institutions to a greater or lesser degree. Twenty-five per cent of our population is rural and the percentage of graduates who go to the country is far below that proportion.

Through the kindness of Dr. Victor E. Levine a census was taken of some 150 students of Creighton Medical College and only eight of the entire number expressed their intention of locating permanently in a rural community. Yet the majority of these students come from just such communities.

Our cities are over-crowded with doctors and with such tense competition resulting as to make a very serious moral and ethical as well as economic problem for the profession. The urge to make a living is a hard strain upon the moral fibre of any one who feels that the odds are against him.

I have long been of the opinion that the rural practitioners of the past and present are, as a class, building a more secure financial foundation than are the urban profession. To be sure there are always to be found outstanding men of the profession, (and they are not confined to the cities), whose income far exceeds their overhead, but these men are few in numbers even in our largest centers of population. Taken as a whole there is probably more substantial prosperity in the country than in the city — "All that glitters is not gold".

It must be apparent to all who have given this subject any considerable thought that there is need for some change in the existing state of affairs. Instructors, students and practitioners of medicine have precious little to say about it. A bureaucratic government controls the situation and as yet this bureaucracy is sitting tight and has shown no disposition to yield to popular demand. But on the contrary, restrictions are becoming more and more restrictive and the burden upon the student is increasing year by year. I am told by a dean of a dental school that in Switzerland the dental students were required to take a full college course in arts and sciences and a complete course in medicine before taking up their studies in dentistry. The law of supply and demand got in its work as it will certainly do in professional circles as truly as in business. Dentists were few in number, they were to be found only in the larger centers and their charges were prohibitive to the average individual. What happened was just what is very likely to happen in this country to medicine unless a change is brought about voluntarily by those in control of medical education. The legislative body yielded to the demands of unions and would have passed a law permitting a man to practice dentistry with but a single year of training after a high school course. This legislation was forestalled only by the making of a compromise. Witness the recent action of the legislature of Tennessee which took the matter of medical legislation into its own hands, authorizing the granting of a license to practice medicine in the state of Tennessee after four years of high school and four years of medical school work.

Thirty years ago there was one cultist to 52 licensed practitioners of medicine; three years ago there was one to ten and at the present rate of increase of cultists and decrease of doctors of the regular school of medicine, the proportion will be one in five by 1930. Our rural communities should have and will have doctors and it is up to bureaucrats of medical education to supply the demand or leave it to a choice between the cults and state medicine. The injustice done to our clinical pathologists by the State Laboratory in serving the rich and poor alike without charge is but a foretaste of things to come, though not desired. It is but a step from diagnosis to treatment.

An ingenius though not altogether convincing argument in favor of the views of the National Board of Education is presented by Raymond Pearl. A clever statistician may present figures and arrive at conclusions which look very formidable to the uninitiated, but which are very often susceptable to various and sometimes erroneous interpretations and in the end serve no other purpose than to confound the earnest seeker of the truth. Formulae expressed in decimals and X, Y, Z's are meaningless to the average mortal and fail to impress the practical observer.

Referring to the rural practitioner Pearl says:

"The effects of competition, the law of diminishing returns and all the other somewhat sad and tawdy aspects of economics vex him as they do the rest of us. It seems to me, with all due respect for the argument in favor of the view I am opposing, improbable that the physician's behavior in this matter will be essentially altered by giving him a cheaper medical education. Some have argued that by definitely shortening the time of medical education the situation and tendencies under discussion will be changed for the better. It seems to me that this argument can be logically maintained only on the assumption that a lowering of the standards of medical education will attract into the profession persons who are so mentally debased and generally idiotic that they will not display that degree of common sense in the conduct of their individual economic lives, as evidenced by their geographic distribution, that we see exhibited every day by common laborers, chiropractors and even college professors". Further on Pearl asserts that "perhaps the chief social and human value of the physician is in alleviating suffering rather than in preventing death, at which last task he must in every case fail".

Such arguments as the above may satisfy in theory those who are biased in favor of the present system. They do not bring conviction to the unbiased mind. It is manifestly unfair to put into the mouths of Pusey and his supporters the statement that the rural situation will be bettered by turning out cheaper doctors who are "mentally debased" and "generally idiotic". Had Pearl followed the arguments of Pusey with half the zeal he has exercised in combating them he would have known that there was no thought expressed or implied favoring the taking away of one jot or tittle of practical training, nor in the least detracting from that scientific training which will ultimately lead to the one great purpose of all medical education—the relief from suffering and the prolonging of life. It is contended that there is an unnecessary burden placed upon students by loading upon them a not inconsiderable amount of material that has no place in a medical curriculum — this in the premedical years and in the first and second years of the medical course. Furthermore, that the clinical instruction is as grieviously at fault in the presentation of special subjects which might more properly be reserved for graduate work. By a wise and judicious process of elimination the years can be shortened, the expense to the student and to the institution can be lessened and the burden lightened without detracting from the value of medical education. If Raymond Pearl, Ph. D., D. Sc., L. L. D., had had one more degree appended to his name — that of M. D. — he would not have restricted the activities of a doctor to the relief of suffering; he would not have made the assertion, in effect, that since death is inevitable doctors do not save lives. It is true that economic conditions have much to do with the trend of doctors from the rural to the urban districts but it is apparent to all, who will take the pains to look about, that the trend of doctors away from the village is out of all proportion to that of other vocations. Not one but many causes contribute to the problem of medical education as it effects rural practice. Let us not be content with the finding of a single cause, however plausable that cause may be. It is universally recognized that economics is a factor but it is not the sole factor that commands our consideration; surely our educators will not shut their eyes and close their ears to the pressing problem of medical education in its bearing upon the rural practice of medicine.

A comparison of the directory of the A. M. A. of 1906 with that of 1925 reveals some interesting data relative to the drift of the medical profession of Nebraska. In this period of nineteen years the roads have improved and the automobile has replaced the horse.

It is found that the total population of the state has increased 18 per cent, while the total registration of physicians has only increased 12.9 per cent. Of greater significance is the revelation that the rural communities, (2500 and under), have increased 36.5 per cent in population with an increase of only 18 per cent in the number of registered physicians. On the other hand we find in the communities of 2500 and over the total population has increased 46 per cent and the number of registered physicians has increased 86 per cent. The above survey clearly indicates the drift from the rural to the urban districts. It shows that the increase in doctors is not keeping pace with the increase in population in the rural districts and is exceeding the added population, out of all proportion, in the cities. Referring to the assertion that the doctors are leaving the rural districts out of all proportion to other vocations we observe that the rural towns have increased more than one-third in size in the past nineteen years and in the same time the medical profession has increased in number about one-sixth. Towns of 1000 and less inhabitants have increased 17 per cent and the doctors have also increased 17 per cent in numbers. But in towns of 1000 to 2500 the increase in population has been 56 per cent and the increase in numbers of doctors 19 per cent.

We, therefore, conclude that the exodus is from the towns of 1000 to 2500 rather than from those of less than 1000. My interpretation of this phenomenon is that the farming community, which after all is the substantial background of the doctors' business, is as great in the smaller towns as in those of the larger where competition is greater.

We are over-standardized in medical education. The peculiar needs of a given community must give way to the system. Would it not be as logical to standardize the automobile industry on the specifications of the Pierce-Arrow; the mercantile business on the scale of Marshall Field and Wanamaker?

And who would justify the dictum that all who would ride must have a Pierce-Arrow and all who would provide the needs of the community must patronize shops on the scale of Marshall Field?

It will be a sorry day when the family doctor passes away; we do not want State Medicine; we view with alarm the growth of the cults and we are deeply concerned with the problem of rural practice.

What will the National Board of Education, the Council of Medical Education and our educators do about it?

In the passing of the old family doctor are we to be left with only a sentiment as a substitute for that most valued and beloved of all human institutions — the family doctor.

Permit me to close this desertation on Medical Education and the Family Doctor by recalling the story of Ian McClaran and his portrayal of the life of Dr. William MacLure who lived all alone in a little cottage at the head of the glen of Drumtochty.

No one dies in that land of bogs and doons — they just "slippit awa". With simple food, pure air and contented minds they did their full day's work till seventy; looked after odd jobs and tended the Kirk till well into the eighties and "slippit awa" in the early nineties. Persons above ninety brushed aside the opinions of youngsters in their seventies as immature and impertinent.

William MacLure succeeded his father and between the two they were the guardians of the health of the community for nigh on a century. "William was at the beck and call of every man, woman, and child in this wild straggling district, year in and year out, in the snow and in the heat, in the dark and in the light, without rest and without a holiday for forty years". His faithful grey mare was his constant companion, for William had no wife; and behind his saddle were strapped the instruments and medicines the doctor might want for he never knew what emergency he might encounter. He was of necessity self-reliant for there were no specialists in Drumtochty; he was surgeon and doctor, accoucheur and occulist, pediatrician and orthopedist, dentist and druggist.

Of himself he said at the close of his long career of self effacement — "A' did what A' cud tae keep up wi the new medicine but A' hed little time for readin' and nane for traivellin. A'm the last o' the auld schule, and A ken as weel as onybody thet A' wesna sae dainty an fine mannered as the town doctors".

But William MacLure knew his people and as Osler said: "It is much more important to know what sort of a patient has a disease than what sort of a disease the patient has". Mrs. MacFayden testified to this sentiment when she observed that "If Weelum MacLure disna understand oor constitution, wha dis". And her confidence in the professional attainments of her doctor was sublime; said she "If we'er tae dee, we'er tae dee; and if we'er tae live, we'er tae live; but whether we'er tae dee or live, Weelum can aye keep up a sharp moister on the skin". "A' the doctors in the land dinna ken as muckle aboot us as Weelum MacLure; an' he's ill tae beat when he's tryin' tae save a man's life".

"He aye can tell what's wrong wi' a body, an' maistly he can put ye richt, an there's nae new fangled ways wi' him; a blister for the ootside an' Epsom salts for the inside dis his work. And they say there's nae an herb on the hills he disna ken".

On a wooden cross at the head of the grave of William MacLure were written these words: "Greater love hath no man than this, that a man lay down his life for his friends". And the eulogy of Lord Kilspindie ended with the prayer "That all doctors, everywhere, may share his spirit".

THE EPIDEMIOLOGY OF STREPTOCOCCUS SORE THROAT*

J. Jay Keegan, M. D., Omaha, Nebr.

Streptococcus sore throat in recent years has become a commonly recognized clinical entity. Its various manifestations are familiar to clinicians who come in contact with acute respiratory infections although not always recognized by etiology on account of lack of facilities for culture on blood agar media.

The following investigation and report was occasioned by a problem of streptococcus wound and pulmonary infection in the surgical wards of the University Hospital, which was found related to a prevalent streptococcus sore throat epidemic. Surgical procedures were discontinued during the ascending stage of this hospital epidemic and the personnel of the entire hospital cultured for hemolytic streptococci. The report of these cultures will be preceded by some observations on the course of the throat infection in the student and the city population.

---

*From the pathological service, University of Nebraska College of Medicine, Omaha.

EPIDEMIOLOGY

These observations pertain chiefly to medical students and dispensary patients although the general course of the progressing throat infection was followed through clinical reports from practicing physicians. Throat cultures were made on blood agar plates as cases presented themselves at the dispensary or laboratory and hemolytic streptococci found to be the predominant microorganism in all cases under consideration.

Attention was first called to the throat epidemic in November, 1920, by the numerous cases of non-toxic follicular tonsillitis. The severity of the tonsillar lesion increased through succeeding weeks until in early December the focus of infection in the tonsillar crypts led to ulcers on the tonsils, from which quite often typical smears of Vincent's angina were obtained. There seemed at the time almost to be an epidemic of such ulcers among the students. In the latter part of December, with the increase of the tonsillar lesions, there appeared more marked toxic symptoms with the onset of the infection, such as headache, malaise and fever of one or two days duration. Both this initial toxemia and the tonsillar lesions increased in severity until the first part of January, 1921, when there were occurring quite severe cases in which the former follicular patches on the tonsils coalesced to form a distinct membrane that sometimes extended beyond the region of the tonsils. The cervical glands became markedly tender and swollen. The toxic symptoms usually subsided in one or two days but left the patient with a very uncomfortable throat for a week or more with occasional recurrence of acute symptoms or with ulceration. This stage of membranous pharyngitis often presented a difficult problem of differential diagnosis from diphtheria and negative diphtheria culture reports often were questioned by clinicians.

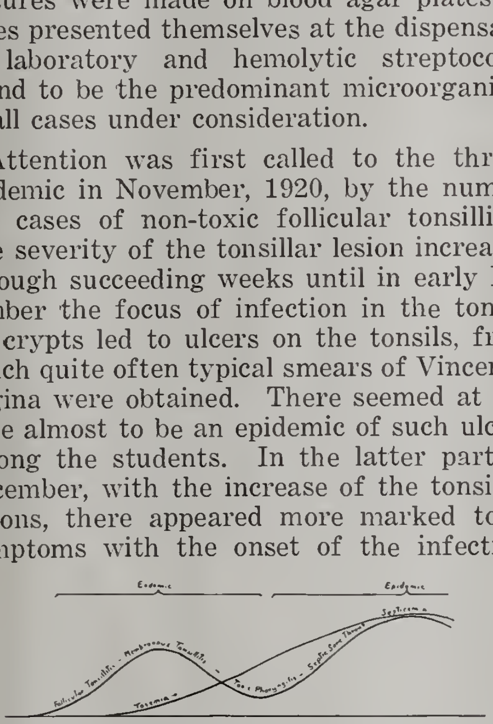


FIG. 1. Stages of pathology and toxemia in streptococcus sore throat.

As the epidemic progressed through the membranous stage the initial toxemia increased and the local lesion began to decrease so that in the latter part of January many cases occurred with a severe toxic onset and comparatively insignificant throat lesion. The tonsils and surrounding mucosa were injected and slightly swollen but there was no membrane nor follicular patches. The cervical glands were tender and complaint was made of moderate dryness and rawness in the throat, complete recovery usually occurring in two or three days. Numerous cultures of these throats on blood agar gave the same constantly predominant hemolytic streptococcus as obtained from the preceding and intermingled membranous cases. This was a somewhat paradoxical transformation of the disease to a milder form as it progressed in virulence.

The next stage in the progress of this endemic and epidemic disease may be called the stage of diffuse pharyngitis with toxemia and complications for it is during this stage that sinusitis, otitis media, cervical cellulitis and nephritis develop. It seems that as the virulence of the streptococcus increases past the simple toxic stage the infection ceases to be kept localized in the tonsils but spreads to a more diffuse pharyngeal reaction, fairly constant initial blood stream infection and secondary localization by surface spread or by blood and lymph metastasis. It is during this stage that there is great similarity between streptococcus sore throat and scarlet fever sore throat.

The further advance or regression of this epidemic of throat infection was followed through the succeeding summer months without very clear definition of form. There was no following epidemic of scarlet fever. Virulent wound infections increased in the dispensary clinic. Atypical sore throats continued. Autopsy was performed on three cases of subacute glomerulonephritis with history of onset from mild throat infection. Acute intestinal infections, not of typhoid or paratyphoid etiology, occurred in considerable number and there were a few cases of streptococcus endocarditis, one of which came to autopsy.

From the preceding observations it seemed that this epidemic disease progressed through several fairly well defined stages of pathology and toxemia before reaching its highest degree of severity. These are shown in Figure 1 as a curve and are classified as follows:

First: Mild tonsillitis.
Second: Follicular tonsillitis.
Third: Membranous tonsillitis.
Fourth: Toxic pharyngitis.
Fifth: Diffuse pharyngitis with complications.

HOSPITAL EPIDEMIC

Reference has been made to the problem of streptococcus infection which presented itself at the University Hospital. The investigation was occasioned by the unexpected occurrence of a rapidly fatal case of post-operative streptococcus wound infection. The occurrence of this fatal case without previous recognition of a serious situation in the hospital shows the ease with which significant infection can be overlooked until called to attention by a serious incident. Questioning immediately disclosed the fact that there had been an unusual prevalence of streptococcus sore throat among the nurses, a veritable small epidemic which had placed several on the patient list on account of the severity of the illness.

This epidemic among the nurses dated from about the time of a fire in the nurses' quarters, December 20th, 1920. Following this fire new quarters were established in two wards of the hospital and thus exposure and a crowded environment favored the more rapid spread of the streptococcus infection in this group. Of the forty-six nurses, nineteen were off duty for illness at various times between December 10th, 1920, and February 1st, 1921. As the infection progressed among the nurses the predominant manifestations changed in the same order as noted previously in the city and student epidemic, except accelerated by the crowded environment. The first cases were typical of a rather toxic follicular tonsillitis. Succeeding cases showed a coalescence of the patches to form a distinct membrane, with occasional peritonsillar abscess and intense cervical lymphadenitis. Later this membranous type of reaction was replaced by a simple toxic pharyngitis of short duration and slight pathology. The cases which occurred towards the end of the epidemic developed a diffuse pharyngitis of scarlet fever type and were complicated by otitis media, sinus infection and occasionally mild arthritis.

Throat cultures of the entire hospital personnel were taken January 15th. They were streaked by swab and platinum loop on quadrants of plain blood agar plates, thus each plate furnishing media for four cultures. These were incubated overnight and read by microscopic observation. Readings were indicated by the values 1 plus, 2 plus, 3 plus, and 4 plus, the highest value indicating almost a pure culture of the hemolytic streptococcus and the lower values the gradations toward negativity.

The results of these cultures were quite instructive in localizing the foci of infection. There were three groups in which were obtained a high percentage of strongly positive cultures. As expected, one group included the nurses, forty-six in number. Of these, 28.3% were positive with 15% 3 plus or 4 plus. Three of these already were on the patient list.

The second group of strongly positives was on the male surgical ward with 30.4% positive in 23 patients, of which 17.4% were 4 plus. Two nurses from this ward were off duty with sore throat and the interne gave a 2 plus culture. One patient was found with an acute throat.

The third group was in the female surgical ward, with 35.3% positives in 17 patients, and 23.5% three plus or four plus. It was from this ward that the fatal case of wound and pulmonary infection came. There were three post-operative pneumonias in this ward at the time these cultures were taken, all of which showed hemolytic streptococci in the sputum.

The children's ward showed a high percentage of positives, 53.8% of 13 patients, but none 3 plus or 4 plus. The obstetrics ward of 15 patients had only two carriers, each with 1 plus. The employees on the kitchen and the janitor services gave 33% positive in 15 cultures, only one of them was 3 plus, and there were no histories of acute or subacute throats.

The conclusion from this first general culture was that the streptococcus throat infection was progressing actively among the nurses and on the male and the female surgical wards. In addition there had appeared three cases of post-operative streptococcus pneumonia in the female surgical ward following the fatal case of streptococcus wound infection from that ward. None of these pneumonias proved serious but evidently there was a pulmonary strain of hemolytic streptococcus well under way to produce more serious pulmonary infections. Seven surgical wounds were cultured and two found with hemolytic streptococci.

Similar cultures of the hospital personnel were taken each week for four weeks and new cases with suspicious symptoms were cultured daily. Only two new cases occurred among the patients after cubical isolation of all 3 plus and 4 plus carriers. Among the nurses, however, seven more cases occurred, due to incomplete isolation and failure of some to report mild symptoms. The routine cultures of succeeding weeks showed the usual persistence of active carriers from three to five weeks after the acute infection. No new cases developed in the hospital after February first but the height of the city epidemic occurred about February 15th, at which time numerous cases of severe sore throat with complications were occurring. It was thus evident that in the ward environment of the hospital the epidemic progressed more rapidly and attained its highest point of incidence three to four weeks before the similar stage in the general population.

Among the medical students there occurred a distinct epidemic of throat infections during the first part of March. The throat lesion in these cases was a diffuse involvement of all the pharyngeal lymphoid tissue, showing no membrane but a slimy exudate over the enlarged lymphoid nodules of the posterior pharynx. The throat resembled that of scarlet fever and transient erythematous rashes were common. Symptoms often persisted several days and sinus infection was common. There were few cases of scarlet fever in the community at this time and no marked prevalence of the disease later.

A questionnaire was given to the medical students March 12th. Questions were asked to determine the incidence of sore throat during the winter, the date, duration and character of attacks, complications, and history of scarlet fever. The one-hundred sixty-six replies were tabulated with the following results: Eighty-three or exactly 50% of the students gave a history of sore throat. By months, 2 occurred in September, 2 in October, 4 in November, 13 in December, 16 in January, 28 in February and 18 in the first two weeks of March. Peritonsillar abscess was reported in 2 cases, sinus infection in 22 cases, otitis media in 8 cases, and joint pains in 15 cases. There was a history of scarlet fever in 35 of the cases of sore throat and in only 43 of the total 166 students. This would seem to minimize possible immunologic relation between the two diseases. The most noteworthy feature of these figures is the incidence of sinus infection in 26.5% of the cases.

CONCLUSIONS

Streptococcus sore throat develops in endemic manner through the winter and spring months, with increase of virulence and appearance of epidemic foci in groups of individuals coming in especially close contact.

The disease at different periods of its development has different clinical manifestations, making it possible to define different stages by predominant symptoms and pathology. These stages in order of progression are classified as follows:

I. Mild tonsillitis.

II. Follicular tonsillitis.

III. Membranous tonsillitis.

IV. Toxic pharyngitis.

V. Diffuse pharyngitis with complications.

VI. Septicaemia.

A fatal case of streptococcus surgical wound infection was found related to a prevalent hospital streptococcus throat epidemic.

ORAL FOCAL INFECTIONS RELATED TO SYSTEMIC AND DEGENERATIVE DISEASES*

L. J. Swanbom, D. D. S., Scottsbluff, Nebr.

It is very gratifying to me to attend such a meeting as this, composed of surgeons, physicians and dentists.

Dentistry is a special field of medicine related to general medicine just as much as any of the other specialties. The mouth, its contained and adjacent structures, cannot be considered apart from the body as a whole. Assuming that this is not disputed, it may further be stated that the dental specialist's field can no longer be considered limited to the boundaries of the oral cavity. He is engaged in prolonging life and his viewpoint should include the body as a unit. Let us see what is demanded then of the modern dentist. To solve successfully the problems he meets daily, he must be a skilled diagnostician and as such must be familiar on the one hand with biology and mechanics, and on the other with physiology, anatomy and pathology. He must have a high degree of technical skill in addition to his general knowledge of medicine and surgery. His work carries him into the fields of chemistry, bacteriology, pathology, histology, metallurgy, physics, electricity and art.

---

*Read before a staff meeting of the Western Nebraska Methodist Hospital.

Now in order to place dentistry in its proper relation to medicine, it is necessary that the medical practitioner know more about dentistry. I shall speak frankly of this and I ask that you bear in mind that my statements are made with the highest motive of interest to medicine and dentistry and above all for the good of the patient. Medical men, as a class, are not sufficiently interested in dentistry so do not acquaint themselves with mouth pathology or the problems the dentist has to face. To the average practitioner of medicine, dentistry consists of filling of decays in teeth, restoring lost ones and prophylaxis.

While both professions work together, after a fashion, the rate of improvement is slow. There should be a common literature and greater cooperation and we should meet together for discussion of our problems and our failures, to the end that our services to our patients be improved.There should be on all hospital staffs, dentists, as there rightly is here on your staff. Physicians should be members of dental societies and dentists of medical societies. Despite the fact that in 1886 or 1887 the A. M. A. passed a resolution declaring dentistry a specialty of medicine and providing for those holding the D. D. S. degree to become members, it is strange that there are very few medical societies to which dentists are eligible for membership.

The recognition of oral pathology and its relation to systemic diseases, its bearing on distant organs and even on the brain, has served to reveal the mutual dependence of our two professions. The welfare of our patients require the closest co-operation between the dentists and the physician. Each should understand the problems of the other and should approach them with an open mind prepared to sacrifice his own prejudices for the general good of the patient.

The mouth is the pivotal point upon which must be built the vitality of the individual. Few realize how many constitutional diseases are fomented, developed, and come from the upper part of the alimentary and respiratory tracts as the primary focus of infection; however, we must remember that the mouth, nose and pharynx are but a small part of the human body. Foci of infection such as teeth, tonsils and sinuses are very often forerunners of serious or fatal conditions, and are doubtless the cause of many of our most distressing conditions and should not be neglected.

The treatment of these foci and the conditions resulting therefrom tax our resources to the utmost. In the first place, we should find all possible foci. The teeth and adjacent tissue should be inspected by x-ray, the various vitality tests made, so as not to overlook a single focus. We must eradicate these foci but not stop at this point, and it is here where cooperation of our two professions is a paramount factor in the eradication of systemic disease; for such localities as sinuses, tonsils, kidneys, prostate, gall-bladder and others should be thoroughly investigated. I will not repeat over and over that I do not believe dental infections to be the only source of systemic troubles because of my confidence in the good sense of the members of this staff.

Rosenow has demonstrated a direct relationship between diseased teeth and appendicitis, ulcers of the stomach, cholecystitis, rheumatism, herpes zoster, myositis, endocarditis, myelitis, neuritis, neuralgia, poliomyelitis, iritis and nephritis.

Most of our systemic and degenerative diseases are related to focal infection of streptococcal origin—the laws of susceptibility, defense, overload, etc., being paramount factors. Where does the streptococcal culture come from? In many cases from pulpless teeth and the secondary foci planted by them throughout the body. In nine out of ten of us, that final combat will come as a premature old age or degenerative disease, and many years before it should, not only because of needless dental infections but also because of other overloads, one of the most important of which is faulty nutrition and diet. A diet deficient in the mineral bases produces many organ and tissue lesions, such as those of the kidneys and the circulatory system, which weakened structures readily become infected if a source such as an infected tooth exists, and together they often produce a grave nephritis. Our dental journals are replete with cases wherein the albumin has completely disappeared after removal of the dental infection without changing the diet; however, it is better to do both.

Weston A. Price gives the following statistics:

1. In the statistical areas of the U. S., as also of England and Wales, the percentage of deaths of all ages attributed to premature failure of heart function exceeds 10%.

2. In the culturing of several thousand teeth with pulp involvements more than 99% have been found to be infected with diplo and streptococci, mostly viridans.

3. It is estimated that subacute endocarditis, in 95% of cases, is caused by streptococcus viridans. (Libman J. A. M. A., Vol. 80, No. 12, Characterization of Various Forms of Endocarditis).

4. Statistics of the U. S. Public Health and Census Depts. indicate that while the death rate from infectious diseases is decreasing, it is increasing for degenerative diseases.

5. The great majority of adult individuals are carrying seriously infected teeth, potentially capable of producing degenerative diseases, if the local and systemic quarantine breaks down.

6. The great majority of adults and children are, therefore, carrying as dental foci the strains of organisms, which are found in a great majority of heart, kidney, joint, muscle and nerve lesions and which are potentially capable of producing these in the absence of adequate defense.

Weston A. Price has been doing research on oral infections and their relation to systemic and degenerative diseases for the past twenty-five years and has for the past twelve years been chairman of the Research Section of the A. D. A. He has stressed a number of his research findings, among which are the following important factors:

1. Radiography is a crude test for determining the exact nature of bone pathology, since pathology is generally a microscopic instead of a macroscopic metamorphosis.

(a) X-rays do not reveal infection and may or may not reveal its effects.

(b) The extent of absorption about a tooth does not express the extent of the infection, except in part, as that individual's reaction to the infection is understood.

(c) An area of absorption of the supporting tissue at the apex of a tooth, or laterally, may not be disclosed because of any of the following conditions: 1. Being hidden by a part of that tooth, such as another root. 2. A heavy mass of bone, such as the malar bone. 3. A layer of condensing osteitis obscuring the rarefying osteitis.

2. Dental infections, involving root canals and their apices and supporting structures, practically always contain streptococci, of which, biologically, there are many types or strains any one of which may be the important causative factor for any of the various types of rheumatic group lesions, regardless of biological classification.

3. Dental infection in bone may express itself as absorption, even extensive absorption, or may be attended by very little or no absorption at all, or may produce a marked increase in the density of bone.

(b) A given dental infection will not express itself in the local tissues of the mouth,approximately the same in all people.

4. Human beings do not react with sufficient uniform similarity to justify the premise that they can all be judged by the same standards and, therefore, considered comparable in their susceptibility to systemic involvement from dental infections. They can, however, be divided into groups, the members of which are sufficiently similar to be judged by the same general standards, and those of that group may then be considered comparable. The basis of this grouping is susceptibility to rheumatic group lesions:

(a) Those with an inherited susceptibility.

(b) Those with an acquired susceptibility.

(c) Those without a susceptibility to rheumatic group lesions.

5. Local dental pathology about an infected tooth has variations, which make grouping and classification easily possible on this basis.

6. Teeth without absorption at their apices can be, and frequently are, infected in the pulp, dentine and apical tissue.

(b) Teeth with periapical absorption can have the same produced by irritating medicaments or trauma.

7. Teeth with moderate caries frequently, and with deep caries generally, have their pulps infected to some extent through this channel.

8. Teeth with shallow pockets from periodontoclasia (or pyorrhea) frequently and those with deep pockets usually, have their pulps infected from this source.

9. Susceptibility to dental caries and systemic involvements from dental lesions are proportional, both as cause and effect, and as related symptoms.

10. Individuals with marked susceptibility to periodontoclasia have, as a group, a decreased susceptibility to the rheumatic group lesions during the period of its active development, or expressed otherwise, individuals with a very marked susceptibility to rheumatic group lesions tend in general to be free from extensive periodontoclasia.

11. There is a direct relationship between tendency to absorption of alveolar bone in response to irritation, whether at the gingival border or at the root apex; and individuals with extensive periodontoclasia have, for a given dental infection, much more extensive areas of absorption at the apices of infected roots, than do patients without a tendency to periodontoclasia.

12. Since different people react differently, through a wide range, to a given infection the extent of the area of absorption is not a measure of danger; but, on the contrary it may be, and frequently is true, that the patient suffering from a systemic reaction caused by a dental infection shows very little absorption compared with that which the same dental infection would produce in a patient with ample and high resistance.

13. Since an adequately active defense against a dental infection both locally and systemically, produces a vigorous local reaction with attending extensive absorption and the products of inflammatory reaction, viz, exudate and plasma in sufficient quantity to require an overflow, usually spoken of as pus from a fistula, this overflow may be, and usually is, evidence of an active defense and is composed almost wholly of neutralized products and is often sterile, and such a condition is much more safe than the same infected tooth without such an active local reaction.

14. Infected teeth can be completely sterilized in the mouth only with great difficulty, or by the use of medicaments whose irritability readily injures the vitality of supporting structures of the teeth.

(b) Many of the usual methods used for sterilization of infected teeth do serious injury to the supporting structures about the teeth.

15. Root canal fillings rarely fill pulp canals sufficiently perfectly to shut out bacteria and toxins completely or permanently. Root fillings usually fill the canals much less perfectly twenty-four hours after the operation than at the time of operation, due to the contraction of root filling material. The ultimate volume contraction of root filling is approximately the amount of solvent used where a solvent is used with gutta percha as a root filling material. Infection is a relative matter and quantity and danger are both related to defense, which may vary from high to exceedingly low.

16. Local comfort not only is not an index of success or safety, but may constitute both what is one of the costliest diagnostic mistakes through injury to health, that exists in both dental and medical practice, because it may only mean the absence of local reaction which would, if present, incidentally make the tooth sore and fundamentally destroy the infection at its source, whereas the absence of this reaction and its consequent destruction of the infectious products permits them to pass through the body to irritate and break down that patient's most susceptible tissue, which tissue can be anticipated very frequently, if not generally.

17. When infected teeth produce disturbances in other parts of the body, it is not necessary that the quantity of infection be large, nor is it demonstrated that it is necessary that organisms always pass throughout the body or to the special tissues involved, but the evidence at hand strongly suggests that soluble toxins may pass from the tooth to the lymph or blood circulation, or both and produce systemic disturbances entirely out of proportion to the quantity of poison involved. The evidence indicates that this toxic substance may, under certain conditions, sensitize the body, or special tissues, so that very small quantities of the toxin or the organisms, which produce it, may produce very marked reactions and disturbances in that tissue.

18. Infected teeth may contain, in addition to micro-organisms, toxic substances, which produce very profound effects upon experimental animals, and which tend to prepare the tissues of the host, at least in some cases, for a more ready invasion by the organisms growing in that tooth.

19. Dental infections may produce very serious changes in the blood and sera of the body, some of the most frequent of which are leucopenia, erythropenia, lymphocytosis and hemophilia.

20. Dental infections tend to produce, in many instances, one or several chemical changes of the blood, the same changes occurring in the blood of animals when an infected tooth is planted beneath its skin and similarly with certain methods of innoculation with the culture grown from these teeth. Some of the changes most frequently found involve: (a) The ironic calcium of the blood. (b) The presence of a pathologically combined quantity of calcium in the blood. (c) A reduction of the alkali reserve of the blood. (d) The development of acidosis. (e) An increase in the blood sugar. (f) An increase in the uric acid. (g) The development of nitrogen retention. (h) The development of products of imperfect oxidation.

21. Dental infections, while potentially harmful, may not be causing apparent or serious injury until the individual is subjected to some other overload, at which time a serious break may come. The chief contributing overloads are influenza, pregnancy, lactation, malnutrition, exposure, grief, worry, fear, heredity and age.

22. Dental infections may, or may not, contain organisms with a specific elective localization quality for certain tissues of the body. When they do so, it is generally because the host is suffering, or has previously suffered, from an acute process in that tissue, which acute process frequently, entirely and permanently disappears with the removal of the focus of infection. Defense and absence of defense to streptococcal infection, as an organ and tissue quality, seems definitely to be related to inheritance and as such, obeys the laws of Mendelian characteristics.

23. Since an infected tooth is a fortress for bacteria within the tissues of the host, and since in accordance with the laws governing the behavior of solvents and solutes, the dissolved substances within the tooth can pass to the outside of it, and similarly the dissolved substance outside the tooth can pass to the inside of it, together with the fact that the defensive mechanisms of the body are quite unable to enter and reach the bacteria within the tooth, except in exceedingly small numbers through the natural openings of the root, which openings will, however, permit the organisms to pass at will from within the tooth to the outside, we must conclude that an infected tooth furnishes a condition and environment that is tremendously in favor of the invading organism inhabiting it, as compared to the host, since the host may only rid itself of the menace by exfoliating it or absorbing it.

24. Dental infections may produce marked changes in carbohydrate metabolism and structural and degenerative changes in the islands of Langerhans with the production of hyperglycemia and glycosuria.

25. His researches have shown that in animals, infections from dental origin may have a very far reaching effect on either the expectant mother or her foetus, which may be prematurely expelled or rendered lifeless.

Inasmuch as a large number of our serious cases of rheumatism, heart and kidney involvements have their origin at the time of pregnancy in humans, in which cases our clinical histories show that there have been present extensive dental focal infections, it is suggested as important, if not imperative, that expectant mothers shall be free from dental focal infections, both for their own safety and efficiency and for the continued vitality and health of the foetus.

26. The so-called dental granuloma is a misnomer for it is a defensive membrane and not a neoplasm.

A normally functioning periapical quarantine tissue is nature's effective mechanism for protecting that individual by destroying the organisms and toxins immediately at their source and thereby completely prevents the tissues of that individual's body from exposure to either of these agencies.

In Dr. Price's clinic the main factor is diagnosis and perhaps his greatest aid in this is his history obtained of patient's blood relations for, "Chips never fly far from the stump." Without ancestral guide posts the dentist wanders uncertainly in the dark. By this history of blood relation, he is able to group his patients according to resistance and susceptibility to rheumatic group lesions, which comprise:

Tonsillitis
Rheumatism
Swollen or deformed joints neck, back or shoulders
Lumbago
Neuritis
Sensitizations
Sciatica
Chorea
Nervous breakdown
Mental cloud
Persistant Headache
Heart Lesions
Dropsy
Kidney Lesions
Liver and Gall Stones
Appendicitis
Ulcers of Stomach
Eye, Ear, and Skin Involvements
Pneumonia
Anemia
Goitre
Lassitude, Chilliness
Arteriosclerosis
Stroke

MODERN ASPECTS OF NUTRITION

THE PATHOLOGY OF FAULTY NUTRITION

4. Faulty Food with Reference to Energy Metabolism.

Victor E. Levine, M. A., Ph. D.,
Professor of Biological Chemistry and Nutrition, College of Medicine,
Creighton University, Omaha, Nebraska.

INTRODUCTION

In the two preceding papers we discussed the influence of faulty nutrition on the growth of the young. The lesson of paramount importance that we may carry away from the facts cited is tersely expressed in the nutritional postulate that it is not what we give in the way of diet, but what we fail to give that makes for lack of growth. This postulate also explains, besides subnormal growth, almost all the pathological conditions resulting from improper diet. The cardinal sin in nutrition is omission, not commission. Let us illustrate more fully. Frequently we hear of a baby that is not getting along well because it is being fed too much carbohydrate, too much fat or too much protein. The blame is usually plastered upon the food given in excessive quantities. In reality the youngster is receiving too much of one nutriment and too little or none of others. Thus a baby fed too much fat is probably getting too little protein or carbohydrate or too little of the other indispensible food accessories. Cutting down the fat intake may improve markedly the condition of the child, for it is now possible to introduce some of the other nutritional necessities of life.

FAULTY FOOD AND METABOLISM

We now come to the subject of metabolism and the influence of food upon its processes. Faulty food effects energy production, tending as a rule to lower heat production. It also impairs the oxidative mechanism and functional integrity of the endocrine glands. The course of the intermediary chemical processes involved in metabolism are also altered in certain types of food deficiency. We reserve the discussion of the relation of diet to the integrity of the endocrine system, and also to intermediate metabolism for the next two articles.

FAULTY FOOD AND LOWERED HEAT PRODUCTION

Faulty food affects profoundly the energy metabolism of the organism. Magnus-Levy(1) was the first to call attention to the fact that great reduction in heat formation accompanies emaciation. Allen and DuBois(2) reported a fall in the energy metabolism of people losing weight. They also noticed a lowering of heat production in diabetic patients fasted according to Allen's method of treatment. Jansen(3) found the temperature subnormal in hunger edema. Not only undernutrition, but a diet sufficient in calories but deficient in certain indispensible factors also brings about an impairment of the heat-regulating mechanism. Groebbels(4) has observed this impairment in avitaminosis. Subnormal temperatures as a result of various types of faulty diet have been reported by Abderhalden(5), McCarrison(6), Dutcher(7), Okada, Sakurai and Kabishima(8), Werkman(9), and Findlay(10). Pediatricians are well aware of the fact that athrepsia is accompanied by a temperature falling as low as three degrees below normal.

Since appetite in avitaminosis or hypovitaminous conditions is held in abeyance, the lowering, according to Gulick(11), of the basal gaseous metabolism may be due to insufficient caloric intake. This view is also held by Anderson and Kulp(12), who find the fall in metabolism consistent with a decrease in food consumption. Fleming and Hutchison(13) have recently shown that the basal metabolism in undernourished infants falls in proportion to the decrease in weight. Forcible feeding, without due regard to the factors missing, is of no avail in hypovitaminous or avitaminous conditions, since the utilization of food may be much delayed on account of serious impairment of the digestive functions, which may give rise to alimentary stasis.

BIOLOGIC FUEL

In order to supply heat for the maintenance of the biologic machinery the organism must be provided with fuel to be oxidized, a mechanism for oxidation, and a control in the nervous system. Lack of fuel, derangement somewhere in the process of oxidation or impairment of the nervous control may bring about a temperature deviating from the normal.

The fuel we have mentioned is ingested in the form of lipin, carbohydrate and protein. The mineral components, water and vitamins do not in themselves furnish energy, although they are required in the process leading to normal metabolism. It is readily seen how lack of fuel foods may keep the biologic fires down. Lipins constitute the best form of fuel, since one gram yields 9.3 calories, while one gram of protein or carbohydrate gives rise to 4.1 calories.

SPECIFIC DYNAMIC ACTION OF PROTEIN

Besides yielding material for oxidation in the form of carbon and hydrogen, the proteins exert a catalytic influence upon heat production. This characteristic action, which is also shared by amino acids, Rubner designates as the specific dynamic action of protein.

The amount of protein ingested bears a direct relation to climatic conditions. People who live in the tropics have a tendency to partake of little protein. The Eskimos in the Artic regions eat enormous amounts of protein. Excessive meat feeding may even double heat production. Too low a protein diet may induce intense suffering from cold. On a severe winter day the best fortification against cold is a goodly portion of beefsteak, roast beef or liver. In the winter we generally eat more meat so that the organism may be stimulated to greater production of heat.

Experiments have shown that the feeding of single amino acids, such as glycocol or amino acetic acid, can also catalyze heat production. Even in diabetes when the glycocol ingested is converted into sugar and eliminated without the opportunity of undergoing oxidation, it still causes, when fed, increased heat formation. The amino acids or the proteins built from them seem to act as chemical stimuli rather than by virtue of their oxidizable carbon and hydrogen. The specific dynamic action holds for all kinds of protein, for those of inferior as well as of superior type.

FAULTY FOOD AND AN IMPAIRED OXIDATIVE MECHANISM

The lowered heat production coincident with faulty nutrition is no doubt a reflection of the lowered oxidative powers of the organism. Fleisch has shown that the difference between oxygen contained in equal volumes of arterial and venous blood is less in pigeons suffering from beri-beri than in normal birds. That the process of oxidation undergoes depression under conditions of ill-balanced food has been emphasized by Abderhalden(14), Hess(15), deWyss(16), Dutcher(17), Fleisch(18) and others. Some of these investigators maintain that vitamins furnish the structural basis of the oxidizing enzymes of the body. In fact, Marinesco(19) has been able to demonstrate in avitaminous animals actual depression in the activity of the oxidizing enzymes. According to Hofmeister(20), and also to Hess and to Fleisch, symptoms of beri-beri in many respects are similar to those induced by hydrocyanic acid, a compound notorious for its inhibiting action upon the oxidizing mechanism of the tissues. Where beri-beri already exists this compound can even aggravate the symptoms. Abderhalden has fed yeast to starving pigeons and has found acceleration of the loss of weight. This finding he explains on the ground that the vitamin present in yeast stimulates tissue oxidation.

HYPOGLYCEMIA AND NORMAL TEMPERATURE

We must not forget that one of the accompaniments of hypoglycemia is subnormal temperature. Overdoses of insulin lower the body temperature. Arnstein(22) has observed an antipyretic action even with small doses of insulin. Starvation has also been known to give rise to a hypoglycemic condition of the blood. It is very likely that badly undernourished people have a hypoglycemia. Three patients that appeared very much undernourished and whose blood the writer had occasion to examine recently, gave, instead of the normal 100 to 120 milligrams per 100 cubic centimeter of blood, figures ranging from 70 to 85 milligrams.

It is a known fact that infants prematurely born have a subnormal temperature. Schmal(23) not long ago has shown that such infants also have a hypoglycemia. The sugar recorded by him ranged from 51.3 milligrams to 81.2 milligrams per 100 c.c. of blood. In view of the facts cited it follows that one of the paramount needs of the prematurely born infant is heat.

For the conservation of heat in the prematurely born, blankets, hot pads, hot water bottles, various electric devices are used, but for the production of heat it is advisable to offer by mouth orange juice or a solution containing 2 to 5 per cent of glucose, and 0.2 to 0.5 per cent of an amino acid like glycocol. The combined mixture should be made neutral or slightly alkaline. The sugar serves the purpose of raising the temperature by doing away with any possible hypoglycemia, and the amino acid by its specific dynamic action stimulates heat production.

WATER OF METABOLISM

We shall now see how lack of water gives rise to disturbances in temperature. The water required for the manifold biological processes is, for the most part, supplied to the organism in a pre-formed condition. Some water, however, is the result of the oxidation of the hydrogen in lipins, carbohydrates and protein. Some water also forms in the synthesis concerned in the building up of glucose into starch, cellulose or glycogen, of the fatty acids and glycerol into fats, and of amino acids into complex proteins. Water, resulting in the biologic organism from oxidative or synthetic reactions, is spoken of as water of metabolism.

Magnus-Levy(24) calculated the amount of water formed in the oxidation of the various foodstuffs. He found that :

100 grams of fat produce 107.1 grams of water.
100 grams of starch produce 55.5 grams of water.
100 grams of protein produce 41.3 grams of water.
100 grams of alcohol produce 117.4 grams of water.

The large amount of water of metabolism furnished by fat is one of the several reasons why this foodstuff constitutes a goodly portion of the diet in the Arctic regions. The system of stomachs in the camel is most effective and capacious for carrying the water supply of the animal. But we must not overlook the fact that the humps with their great stores of fat also furnish considerable amounts of water.

In some animals the water of metabolism constitutes a very large part of the water required for vital processes. This water may in animals suffice for the entire need over long periods of time. Among those that depend a great deal on water of metabolism may be mentioned serpents, prairie dogs, mice, camels and certain varieties of moths. As for the human being an ordinary mixed diet produces 300 grams of water of metabolism. A diet furnishing 2000 calories gives 240 grams, and one yielding 4000 calories gives twice as much water of metabolism.

DEHYDRATION FEVER

When the water intake is insufficient for biologic needs, tissues may be broken down and the hydrogen of the fragments utilized through oxidation for the production of the much needed water. As a result of the excessive oxidation, the body temperature is raised and fever results. This type of fever is fittingly called dehydration fever.

In 1890 McLane(25) first called attention to this form of fever. He reported an interesting case of hyperpyrexia in a newly born infant. On the sixth day its temperature rose to 106° F. It was found that the child was being suckled at a breast which was absolutely dry. A wet nurse was procured and the temperature fell to normal in a few hours. Crandall(26), several years later, in 1899, described febrile attacks in infancy occurring in inanition. The hyperpyrexia disappeared on the administration of water. Finkelstein(27) in 1908 reported fever in children resulting from dehydration produced by the administration of hypertonic solutions of salt, glucose or lactose.

Dehydration fever is very common in infants in the first few days, generally from the second to the fourth day of extra-uterine existence. The temperature may rise to 102, to 104 and even to 106. The weight may fall considerably, 10 to 15 ounces in the first week. Although the infant is at the breast, it is apparently getting very little milk or none at all. The outstanding characteristics of this condition is the return of the temperature to normal when the baby is given water or physiological saline, or when given artificial feeding, or when put upon a full breast.

Physical examination of the patient reveals a hot dry skin, indicating a lack of water in the system. The little patient is restless and attempts to suckle anything within reach. The less severe cases are characterized by crying and restlessness. When the temperature is very high, the pulse is weak and there is considerable prostration. When the usual local causes for fever are excluded by physical signs, an existing hyperpyrexia may be regarded as one due to dehydration. A pyogenic infection may be differentiated from a dehydration fever by the fact that hyperpyrexia in the former rarely begins before the fifth or sixth day, while in the latter it occurs on the second or third day.

It is very important that a dehydration fever should be recognized early, for untreated cases may prove fatal. When recognized early it may save unnecessary and excessive loss of body weight, which may turn out to be a serious handicap to a newly born infant. The loss in dehydration fever may be as much as twenty-eight ounces. It is very likely that the weight loss in an infant in the very first days of life, regarded as a physiological process, may prove to be a dehydration phenomenon resulting from a poorly filled or even empty breast. It is very interesting to see whether administration of fluids in these early days may altogether abolish the so-called physiological loss in weight. In leaving this interesting topic of dehydration fever, we must not forget to point out that this condition also occur in the life of the baby even far beyond the first few days of life.

In the next article we shall continue with a discussion on metabolism with special reference to the relation of diet to impairment of the endocrine glands.

BIBLIOGRAPHY

1. Magnus-Levy, A. Zeitschrift fur klinische Medizin, 1906, 60, 177.
2. Allen, F. M., and DuBois, E. T. Archives of Internal Medicine, 1916, 17, 1010.
3. Jansen, W. H. Munchen medizinische Wochenschrift, 1918, No. 1.
4. Groebbels, F. Klinische Wochenschrift, Berlin, 1922, 1, 1548, 2130.
5. Abderhalden, E. Klinische Wochenschrift, 1922, 1, 160.
   Abderhalden, E., and Wertheimer, E. Pflugger's Archiv, 1922, 195, 432.
6. McCarrison, R. Studies in Deficiency Disease, Oxford University Press, 1921, p. 640 and p. 480.
7. Dutcher. Proceedings of National Academy of Science, 1920, 21, 10.
8. Okada, S. Sakurai; E. and Kabishima, H. Japan Medical World, 1923, 3, 102.
9. Werkman, C. H. Journal of Infectious Diseases, 1922, 32, 255.
10. Findlay, G. M. Journal of Pathology and Bacteriology, 1923, 26, 485.
11. Gulick, A. American Journal of Physiology, 1922, 59, 483.
12. Anderson, K. J. and Kulp, W. Journal of Biological Chemistry, 1922, 52, 69.
13. Fleming, O. B., and Hutchinson, H. S. Quarterly Journal of Medicine, 1924, 17, 339.
14. Abderhalden, E. Biochemische Zeitschrift, 1922, 128, 540; Klinische Wochenschrift, 1922, 1, 522.
15. Hess, W. R. Zeitschrift fur physiologische Chemie, 1921, 117, 284.
16. DeWyss, W. H. Lancet, 1922, 1, 100.
17. Dutcher, R. A. Journal of Biological Chemistry, 1918, 35, 547.
18. Fleisch, A. Archiv fur experimentelle Pathologie und Pharmakologie, 1922, 95, 17.
19. Marinesco, G. Presse Medicale, Paris, 1923, 31, 163.
20. Hofmeister, F. Biochemische Zeitschrift, 1922, 128, 540.
   Hofmeister, F. Chemische Wochenschrift, 1922, 1, 522.
21. Abderhalden, E. Pflugger's Archiv. 1922, 193, 329.
22. Armstein, A. Wiener klinische Wochenschrift, 1924, 37, 609.
23. Schmal, S. Zeit. f. Kinderheilk, 1924, 38, 597.
24. Magnus-Levy, A. The Physiology of Metabolism in C. von Noorden's Metabolism and Practical Medicine, Chicago, W. Keener, 1907, 1, 392.
25. McLane. Citation from Holt and Howland, Diseases of Infancy and Childhood. Appleton and Co. 1923, p. 119.
26. Crandall, R. M. Archives of Pediatrics, 1899, 16, 175.
27. Finkelstein, H. Jahrb. f. Kinderheilk, 1908, 163, 692.

POLIOMYELITIS FROM THE STANDPOINT OF THE NEUROLOGIST*

George E. Neuhaus, M. D., F. A. C. P., Omaha, Nebr.

Poliomyelitis is an acute infectious and contagious disease which on account of its destructive action on the motor nuclei of the brain and cord frequently produces life-long disabling paralysis. An endemic disease in many localities, it affects children between 1 and 3 years of age; Duchenne mentions one case at 12 days, but it becomes epidemic at irregular intervals and then affects older children and even adults.

The mortality of the New York City epidemic was 24%.

Its pathology is not limited to the anterior horns of the spinal cord as was taught formerly, but there are evidences of a general infection affecting the lymphoid tissue of the body. The brunt of the infection is borne by the nervous system. Its first reaction to the invasion is a round cell infiltration of the pia. There is marked perivascular infiltration; enormous hyperemia and small hemorrhagic foci are frequent. Microscopic slides from poliomyelitic cords show that the posterior horn cells are as frequently involved as those of the anterior. But for some reason not understood the anterior horn cells seem much more vulnerable and suffer a permanent damage while the posterior horn cells must recover completely — at least painstaking examination of patients after recovery fails to reveal any permanent sensory change. The cells of the ganglia on the posterior roots, the Gasserian and sympathetic ganglia, have been found affected. The changes in the nerve cells are of great variety; cloudy swelling, chromatolysis, vacuolization, etc., all the commonly observed changes incidental to reaction of nerve cells and their degeneration are observed.

---

*Read before the Omaha-Douglas County Medical Society.

It is claimed that we have in the Flexner and the Rosenow sera effective means of checking the disease before paralysis occurs provided they are used reasonably early. After paralysis has occurred it seems doubtful, to say the least, that either serum can in any way help the recovery of the stricken cells. It is, therefore, of the utmost importance to improve our diagnostic methods so that we can with reasonable certainty diagnose, if not all, at least the great majority of cases, before the end of the first — the preparalytic stage. Those of us, whose work brings us in contact with many of these patients who are crippled by this disease cannot but believe that many of them were not diagnosed before they became paralyzed. This is especially true of sporadic cases; when an epidemic exists the physicians' attention becomes sensitized to the early symptoms of this disease and he recognizes them promptly.

A careful anamnesis covering a period of about a week or ten days before the acute onset will bring out in from 25%-40% of the cases a history of an upset 3-10 days before, when the child had some gastrointestinal disturbance, either diarrhoea or constipation perhaps followed by diarrhoea. This is followed at times by a period entirely free from symptoms lasting 3-7 days, or the initial upset persists until the beginning of the disease itself. Draper considers this initial upset as the response of the organism to the invasion of the virus. In other cases in place of the digestive upset, symptoms referable to the respiratory tract are observed as a coryza or a bronchitis.

At the end of this initial upset or of the asymptomatic period following it the actual poliomyelitic attack is ushered in. The temperature now rises to 100 or 102½ F. This lasts 3 or 4 days and frequently subsides with the onset of paralysis; the fever period may be so short as to escape observation as for instance in the case of children who are put to bed apparently well and found paralyzed in the morning. The pulse rate may be accelerated out of proportion to the rise in temperature. The child may be drowsy or listless; at times it is excited and restless; and occasionally convulsions are the first symptoms of any serious trouble. There is at times some vomiting often not projectile in type and attributed by the mother to the digestive upset. Though the child is listless he is suspicious and apprehensive of an examination.

In addition to these symptoms which are perhaps not very different from those found at the outset of most acute infectious diseases of childhood there are some which are characteristic and point very plainly to the central nervous system as being involved in the disturbance. The child seems frequently to be in pain, often aggravated by movement — at least the patient seems to desire to be left undisturbed and changes his position as little as possible. Children old enough complain of pain or stiffness in the muscles of the neck, of pain in the back, the hips or legs. The pain is accentuated by motion. Children often will not sit up and when put in the upright position for the purpose of examination they support the back by bracing both hands on the bed.

Examination shows the neck to be stiff, but there is no retraction, as a rule, and only a moderate Kernig sign and in about one-half the cases a marked hyperesthesia so intense at times as to make the pressure of the bedclothes intolerable. Examination may find certain muscle groups sensitive on passive motion or to deep pressure. The reflexes are apt to be disturbed at this stage, superficial as well as deep. Profuse sweating, general and local, has been reported in many cases. Flushing or blanching of an arm or a leg preceding its paralysis is probably an indication of a lesion of the corresponding portions of the autonomic nervous system. In some epidemics scarlatiniform rashes have been observed early in the disease and may add to the difficulty of the diagnosis; congested throats, minute spots on the cheek somewhat resembling Koplik spots have been described by Reagan in the New York epidemic of 1916. This period may last from 12 hours to 3 or 5 days or even longer, when the temperature begins to drop and in a certain percentage of the cases paralysis sets in.

With the onset of paralysis different types of the disease reveal themselves depending on the localization of the virus. They are not only interesting from a neurological standpoint but of practical importance as the localization of the disease has a decided influence on the prognosis. Wickman who based his classic monograph on the study of the great Swedish epidemics distinguishes eight types. These types frequently overlap as the virus affects the nervous system in a very scattered and widespread manner, but different cases show various predominant localizations so that one is justified in making these distinctions.

The commonest form is without doubt the 1. Spinal type. The muscles first paralyzed are those that remain permanently affected and in most cases there is only one assault by the disease, but one does see cases occasionally where the disease after apparently having done its worst after a day or two seems to take a fresh start and paralyzes another group of muscles. In my experience these have been cases where the temperature did not subside after the onset of the paralysis, as it usually does, but kept hanging around 100.5-101 F. Sometimes the paralysis develops in a different way. There is at first a widespread weakness. One of the cases of this type had a weakness of both legs but no single muscle or group of muscles was totally paralyzed. About twelve hours later the entire left leg was distinctly paretic and could be moved only slightly although there was no muscle group completely paralyzed until a few hours later the quadriceps extensor of this leg was totally paralyzed. During this patient's convalescence all the weakened and partially paralyzed muscles recovered but the quadriceps of the left leg remained permanently paralyzed and underwent the atrophic changes characteristic of this type of paralysis.

The lower extremities are much oftener attacked than the upper, in some epidemics twice, in others four times as often. While all muscles of a limb may be affected at first it is very rare for all of them to remain so permanently. In the upper extremity the deltoid and scapular muscles, in the lower the quadriceps, the peronei and the tibialis anticus are most often affected. The muscles of the trunk are more frequently involved than those of the arm, but their paralysis is often overlooked so that when spinal curvature develops later on the relationship between this and a preceding attack of poliomyelitis is not recognized, to the detriment of the patient. Pierre Marie has claimed that these deformities may develop many years after the original attack. Weakness of the abdominal muscles is important as the intra-abdominal pressure against these paralyzed muscles causes them to balloon out. If the recti abdominis are involved the patient is unable to sit up from the recumbent position.

Sensory disturbances are common at this time as would be expected from the pathology of the disease. Hyperesthesia of an intense degree has been mentioned, but there may also be loss or diminution of sensation either to pain and temperature or to touch. These sensory symptoms cannot be ascertained in very young children.

Symptoms on the part of the vegetative nervous system are not uncommon: Retention of urine and of feces due to central lesions occur quite frequently but are apt to be transitory. Later in life in these cases one finds conditions that probably stand in relation to these lesions: Chronic intestinal weakness, visceral ptoses, mucous colitis.

The skin frequently becomes the seat of vasomotor disturbances; it is cooler than on the unaffected side and of a bluish red color.

The paralysis in these spinal cases is always of the atrophic type being due to destruction of the anterior horn cells.

The gradual restitution of these weakened paralyzed muscles extends over a period of many months. At the end of six months spontaneous, unaided improvement generally ceases. But under proper treatment improvement continues for many months and years.

A very unusual type of spinal poliomyelitis has been observed by Dubs, a Swiss physician. Undoubtedly some of the symptoms noted must have been due to sympathetic ganglion involvement. This patient was taken ill and developed marked tenderness at McBurney's point and the sudden release of abdominal pressure provoked lively pain. This patient was operated for appendicitis, a perfectly normal appendix found, but a few days later he developed a flaccid paralysis. In discussing this case Dubs points out that there were features which while perhaps not sufficient for a diagnosis of poliomyelitis before paralysis at least were sufficiently inconsistent with appendicitis to prevent operation: The temperature was high from the very beginning, there was leucopenia, hyperesthesia in other parts of the body, regional sweating and marked headache.

2. Another type of poliomyeletis is the acute ascending or Landry's type—at times it follows the reverse order and descends. In the ascending type paralysis at first affects the lower extremities, then the mucles of the hips, abdomen, thorax, finally the cranial nerves become involved. Death is frequent in this form due to bulbar paraly-

sis. In the descending type, which is very rare, probably because most patients with bulbar involvement die, the bulbar symptoms appear first and then the arms, trunk, abdomen, and lower extremities become involved.

3. Bulbar and Pontine forms. Cranial nerve involvement occurs occasionally in most types but there is a group of patients where the involvement of the cranial nerves is the chief feature. The facial nerve is most frequently affected, paralysis is of the nuclear type and usually involving the entire half of the face. Next in frequence are hypoglossal paralyses. There paralyses are unilateral as a rule. Eye muscle palsies are not common, the 6th nerve is caught oftener than the 3rd and 4th. Ptosis, external and internal opthalmoplegia, nystagmus and choked disk are rare compared with what is found in encephalitis. 9th, 10th and 11th nerve involvement gives the bulbar syndrome with dyspnea, pharyngeal and laryngeal palsies. The latter not infrequently remain as permanent residuals of the disease. This ponto-bulbar type is much more fulminating. I have seen a case where after the prodromal period the child was suddenly seized with respiratory distress and died within a few hours. But even these cases with complete intercostal or diaphragmatic paralysis may get well.

4. The Encephalitic or cerebral form. In some of these cases the patient passes through an excited phase with delirium into stupor. The infection may spread through the entire encephalon or attack mainly the cortex—we see these cases with intense headache, convulsions, spastic paralysis hemi- or di-plegic in type. One case of this type had a short prodromal period with coryza followed by hyperesthesia, retraction of the head, then convulsions set in and after these subsided the patient had a right hemiplegia. A brother of the patient in the same apartment had a typical spinal type, flaccid paralysis.

5. The Cerebellar type is rare—one sees only occasionally patients with cerebellar symptoms.

6. The meningitic form is important from the standpoint of differential diagnosis. These cases show a very violent reaction of the lepto-meninges to the virus and often die with the picture of a meningitis before paralysis sets in.

7. The poly-neuritic form as the name indicates show symptoms of a polyneuritis: Marked hyperesthesia, tenderness of the nerve trunks to pressure, positive Lasegue sign and so forth. Anatomical changes in the peripheral nerves are wanting.

8. Involvement of the vegetative nervous system takes place in some cases. Wickman has described quite a numerous group of these cases. Residuals of infections are bladder, bowel, gastric syndromes. Diabetes has developed after poliomyelitis.

9. There remains a large group of cases which have somewhat the following symptomatology: A child is taken ill during a known epidemic of this disease with the usual symptoms of beginning poliomyelitis but paralysis does not develop. The patients soon get well. There are different varieties of this abortive, rudimentary type: Some children show the symptoms of a mild general infection, others run an influenza like course, a third group have gastro-intestinal symptoms, and a fourth meningeal symptoms. These cases develop side by side with typical poliomyelitis cases and may convey this disease to others so that observers consider them to be undoubted cases of this disease, poliomyelitis. Wickman estimates them as being about 15% of the fully developed cases. Others place the figures at 40% and Mueller thinks they are more common than the paralytic form.

From the standpoint of immunology these cases also are the subject of discussion: Some claiming that they confer immunity and that their frequency explains the immunity of most adults, while others state the opposite—that they do not protect against a typical attack later.

If these abortive forms should prove to be as frequent as has been claimed—the difficulty of evaluating the efficacy of any treatment like the Rosenow or even the Flexner serum treatment becomes very difficult. These cases also have probably much to do with the spreading of the infection, as every unrecognized case remains unquarantined and a constant source of new cases. The disease seems to be conveyed through nasal, salivary, and perhaps gastro-intestinal secretions. It does not seem to be highly contagious except during epidemics. Monkeys have been made immune by innoculation.

It is stated by Amos and Flexner and others that the nasal washings from healthy persons inhibit the activity of an active virus: While those from a person suffering from acute poliomyelitis under identical conditions of preparation may exercise no restraining influence. They have also found that the communicability of the disease is greatest during the febrile period while frankly paralytic and convalescent cases are much less dangerous in this respect.

At times it is extremely difficult to distinguish the early, preparalytic stage of poliomyelitis from the early stage of encephalitis a disease in many respects very closely related to poliomyelitis. Difficulties also do arise in the distinction of poliomyelitis from tuberculous meningitis and cerebro spinal meningitis. Clinically these cases may resemble each other so closely as to make diagnosis absolutely impossible. The only resort then is to the examination of the spinal fluid which often gives us information that cannot be obtained in any other way. It is, of course, possible to make fine clinical distinctions as to the presence or absence of certain symptoms considered to be more frequent in one than in another form of these diseases clinically at least so closely related at times. Practically it will always be the spinal fluid that gives the final decision.

A series of 74 spinal fluids from cases of poliomyelitis were examined by Reagan from time to time during the course of the disease. He found the fluid clear, pressure slightly increased, cell count above normal even on the first day and then gradually increasing to 40, 100 and even 500 cells.

The globulin began to increase slightly on the second day and progressively for several days and to persist in excess even after the cell count had become normal. The colloidal gold showed a weak luetic curve.

The encephalitic spinal fluid has frequently been found to be entirely negative. Lymphocytosis is not infrequent. Globulin is frequently not increased but glucose is as a rule. The colloidal gold curve is of the meningitic type.

In tuberculous meningitis the fluid is usually under pressure, as a rule clear although in very acute cases it may be hazy. When a tube with fluid is allowed to stand it may form a delicate web of fibrin, but this may also occur in other conditions. The cell count varies from 25 cells to 1000. As a rule the mononuclears form 80 to 100% of the count. In the centrifuged specimen the tubercle bacillus can usually be demonstrated.

In cerebrospinal meningitis the fluid is under pressure and cloudy, often purulent. The cells which are almost all polynuclear leukocytes may vary from fifty to hundreds of thousands. In smears the presence of a Gram negative diplococcus, intra- or extracellular may be demonstrated. Proteid is increased, glucose diminished or entirely absent in severe cases. The colloidal gold curve is of the so-called meningitic type.

The purpose of this paper is to point out the importance of an early diagnosis in poliomyelitis because only early recognition of the disease will give the patient the benefit of whatever help there may be in serum treatment. It should be remembered in evaluating the efficacy of any treatment in warding off paralysis, that all observers at least of the epidemic type of this disease agree in claiming that a large proportion of the patients ill with this disease never develop paralysis no matter under what form of treatment.

—416 Aquila Court.

DISCUSSION

Dr. G. Alexander Young, Omaha: When I think of poliomyelitis such a varied mass of ideas come to my mind about it that it is hard to pick out those acceptable for discussion. There are, however, a few points that I would like to mention.

The first is the relation between poliomyelitis and epidemic encephalitis as acute infectious diseases of the nervous system. Both are diseases that may have disastrous effects upon the patient. They so frequently come in connection with each other in epidemic form. Medical history shows that even as far back as the fourteenth century epidemics of disease resembling encephalitis and poliomyelitis were recognized. Sometimes poliomyelitis would come before an epidemic of influenza and encephalitis would come afterwards. This holds true today. The 1916 epidemic of poliomyelitis preceded the influenza of 1918 which in turn was followed by epidemic encephalitis in 1919-20. Last fall and the early winter there were a number of cases of poliomyelitis and now the same is true of encephalitis.

The origin of both is in similar types of non-filtrable virus which as yet have not been isolated. Because of this ignorance as to the essential cause of poliomyelitis and encephalitis specific serum therapy is not available in either of these diseases.

The mode of onset of poliomyelitis is cyclonic. The patient either dies in a few days, is more or less crippled with a permanent paralysis or recovers completely. The story is soon told. In encephalitis the course is protracted and often progressive.

An important consideration in the treatment of poliomyelitis is early recognition of the disease. A safe rule is that any febrile illness with headache, backache and vomiting, occurring in the fall or in the presence of an epidemic should be treated as a potential poliomyelitis. We so often do not see these cases until the paralysis has fully developed and but little can be done to improve matters.

The treatment of poliomyelitis should include absolute rest in bed at the earliest possible moment. Some authorities recommend splinting of the limbs. Lumbar puncture is useful to relieve cord oedema. Specific serum therapy is not available except in the use of serum taken from convalescent patients which is said to be effective when used in the first forty-eight hours of the disease. Flexner and Amoss have elaborated the technique. Isolation of the patient should be practiced. The virus is found in the upper respiratory tract six days before to two weeks after the onset of the paralysis and during this time the disease is communicable.

An important point is that during rest in bed, which should be continued at least for six weeks to three months, the limbs should be placed in a position which would prevent stretching of muscles. For instance, the deltoids should be relaxed by abduction of the arms, and the tibial peroneal group by dorsiflexion of the ankle.

I have enjoyed Dr. Neuhous' paper very much. He has covered the various syndromes and the differential diagnosis in a most complete manner. In a subject of such extent any presentation or discussion must necessarily be fragmentary.

CARCINOMA OF THE VULVA*

Max Emmert, M. D., F. A. C. S., Omaha, Nebr.

Carcinoma of the vulva is not a frequent disease. The frequency of its occurrence may be estimated by statistics of the Johns Hopkins Hospital where 19 cases of carcinoma of the vulva were seen during the same period of time that 756 cases of carcinoma of the cervix came under observation, or one case of carcinoma of the vulva to 39.4 cases of carcinoma of the cervix. The infrequency of its occurrence justifies a review of literature and the report of single cases.

Carcinoma of the vulva usually starts after the age of forty, though several cases have been reported in the third decade of life. The fifth decade seems to be the age of greatest incidence. It occurs both as squamous and cylindric cell types apparently dependent upon the site of origin. In 115 cases reported by Dettrick, 52 cases occurred on the labia majora, 35 cases on the clitoris, 21 cases on the labia minora, 3 at the anterior commissure, 3 at the posterior commissure and 1 at the vestibule. Bartholin's gland is occasionally the starting point for adeno-carcinoma. 97 patients were married, 10 widowed, 8 single. On the labia, the condition appears primarily either as (1) simply a thickness of the epidermis which tends to develop cracks and fissures, or (2) as a localized papule, vesicle or wart which sooner or later ulcerates, or (3) as deeper tumors of the sweat glands or Bartholin's gland which may precede the appearance of the superficial lesions.

Writing on Pelvic Tumors, Lynch has the following to say regarding carcinoma of the clitoris: "The majority of tumors are situated in the folds of the nymphae between the large and small labiae. More seldom in the glans itself and least often in the prepuce of the clioris." In gross appearance he divides the condition into the following classes: (1) More or less circumscribed. (a) Ulcerated tumor sharply demarcated. (b) Papillomatous tumor frequently with a definite pedicle. (c) Enlargement of the clitoris, yet maintaining more or less its normal outline. (2) Diffuse infiltration which is firmly fixed to the deeper tissues. Occasionally the skin is elevated en masse. It may, however, show only small islands of elevation. (3) Form resembling Paget's Disease. The skin is soft but contains, scattered through it at intervals, a number of small pea to bean size nodules. At the edge of the neoplasm is a fine, white, slightly raised epithelial border. Carcinoma of Bartholin's gland may occur either as a squamous cell or adenocarcinoma type. It varies in size from a pea to a large orange. Usually it is firm and nodular. which makes recognition easy; but at times, when soft, it may easily be confused with abscess of the gland. As secondary infection is frequently present, the mass is usually red. However a bluish discoloration with dilated veins is very suggestive of malignancy. Ulceration occurs early as a rule and pressure upon the gland may express from the mass little maggot like bodies of cheesy material which resembles the contents of a sebaceous cyst. Edema of the adjacent labia is often noted.

Involvement of the inguinal glands may occur as early as 3½ months from the beginning of the disease. On the other hand inguinal involvement may be delayed for several years. Schwartz found only one-half of the swollen glands were malignant. Clark quoting Brady states, that, of the 19 Hopkins cases, enlarged inguinal glands were found in only three cases. It is needless to say that secondary malignancy in the inguinal glands makes the prognosis almost hopeless, although Rupprecht (loc. cit) gives a comparatively favorable prognosis for the superficial lesions and reports cases cured after the invasion of the lymph nodes. As a general rule most cases of carcinoma of the vulva are fatal within two years after the discovery of the lesion if operation is not performed. Following operation H. Schultze reported 14 cases out of 114 free from recurrence after five years.

---

*Read before the Elkhorn Valley Medical Society, Fremont, Nebr., March 17, 1925.

The one outstanding suggestive symptom is itching (pruritus vulvac) which may be present for several years prior to a demonstrable lesion. This itching is not constant but is recurrent and varies in intensity. As it is the prodomal symptom present in a great majority of cases of carcinoma of the vulva, its significance should be clearly appreciated by the attending physician. A later symptom is sticking pains which first occur in the lesion, next in the inguinal region and later in the extremities. At times lancinating pains may radiate to the groin or coccyx. These pains are usually aggravated by walking and also during the menstrual period.

Ulceration and discharge is a comparatively late manifestation of the disease. Unless the physician has carcinoma in mind there is a tendency to treat these ulcers as simple infected lesions, especially when the characteristic hard indurated margins of malignancy are not present. Bleeding is a late sign and occurs when there is considerable sloughing. Dyspareunia is common especially in advanced cases. When the condition starts in the region of the clitoris urinary symptoms may be present. These start first with tenesmus, then obstruction to the flow of urine and later incontinence of urine.

It must not be forgotten that subjective symptoms may be entirely absent, while the growth is small, hence the absence of symptoms does not preclude the possibility of malignancy. Crosse, says, "Experience has shown that unless recognized and extirpated very early the disease is usually incurable."

Carcinoma of the vulva must be differentiated from the following condition: (1) Lupus vulvae which occurs early in life. Ulceration shows a tendency to scar tissue formation as the ulcer advances. There is no pain. (2) Chancre—Gives a history of infection. The ulceration is rapid and not painful and shows no tendency to spread. The lymphatics are involved early. (3) Chancroids—History of infection. Ulceration occurs rapidly. Has sharp punched out appearance with undermined edges. Is highly inflammed. (4) When inflamed, the venereal wart can scarcely be differentiated from carcinoma. (5) Condyloma—May be mistaken for cancer. But absence of pain and ulceration are important. They may bleed easily if inflammed. Usually evidence of gonorrhea can be found. (6) Urethral caruncle may simulate malignancy but is never indurated.

The ideal treatment for carcinoma of the vulva is the same as for carcinoma elsewhere, namely the removal of the lesion before malignancy occurs. An appreciation of the prodomal signs and symptoms plus radical therapy will give the best results. After the development of carcinoma a radical excision of the labiae, clitoris, inguinal glands and the intervening lymphatic bearing tissue offers the only hope of cure.

I wish to report the following case which came under my observation August 28, 1924.

The patient, Mrs. E., aged 58, came complaining of "a sore in the vagina". With the exception of having had an attack of jaundice 20 years ago and the removal of a cervical fibroma 10 years ago she had always enjoyed good health. Her menstrual life began at 15, without trouble. She married at the age of 18, and had given birth to ten healthy children There had been no miscarriages. She passed through the menopause at the age of 52. There had been no pruritis vulvae.

The present illness began three years ago when she discovered a small "pimple" on the right side of the vulva which looked and felt like a "small boil but did not ache." This gradually grew larger for two years before it ulcerated at which time she consulted the family physician. The ulceration gradually increased in size in spite of treatment. There had been very little discharge and no pain except a little irritation following urination.

Examination revealed a very large obese woman apparently healthy. Thorax and abdomen were negative. Vaginal examination revealed the lower half of the right labia majora to be replaced by an ulcerated area the size of a silver dollar. The surface was granular in appearance and of a pinkish grey color. The edges were slightly indurated. At the lower border of this area was an indurated mass the size of a pigeon's egg. If this mass was pressed between the thumb and forefinger there was expressed from it little maggot-like bodies of greyish white cheesy material resembling the contents of a sebaceous cyst. The entire involved area was movable over the underlying tissue. A group of large hard glands were felt in the right inguinal region. Vaginal and rectal examination failed to reveal the presence of other glands.

Clinical diagnosis—Carcinoma of the vulva involving Bartholin's gland with extension to the inguinal glands. Under local anaesthesia the local condition was exercised together with the inguinal glands following which, the site of the primary growth was cauterized and left open.

Pathological report (microscopic) extending downward from the surface and infiltrating the specimen to a considerable degree, were penetrating columns and cords of epithelial cells which very frequently showed central keratinization into epithelial pearls. The downward growth was utterly without anything in the way of delimitation. Diagnosis—Epithelioma. The wound healed kindly and remained so until about the middle of November, when the patient noticed a little bleeding. Examination, December 12th, revealed a semi-fluctuating mass the size of a sparrow's egg, at the upper margin of the scar. Pressure upon this caused a cheesy material to be expressed. On the surface was an ulcerated area the size of a split bean. This mass was excised deeply with the underlying tissue followed by cauterization. X-ray treatment advised and followed.

About the middle of the following January the patient noticed a hard lump in the right inguinal region. On Feb. 25th, under general anaesthesia the mass was removed together with a radical excision of all lymphatic bearing tissue in both inguinal and pubic regions.

RESUME

1. Carcinoma of the vulva is a rare condition and therefore should always be considered in all cases of disease of the vulva.

2. It is much more prevalent after the menopause. The age of greatest incidence is the fifth decade.

3. The outstanding suggestive symptom is itching which may precede the demonstrable lesion by several years. It is not always present so that the absence of itching does not preclude the possibility of cancer.

4. The local lesion is usually an induration of the dermis, a papule, a vesicle, or wart, a crack or fissure or an enlargement of the clitoris or Bartholin's gland.

5. Ulceration which does not heal kindly under treatment is strongly suggestive of malignancy.

6. Enlargement of the inguinal glands increases the gravity of the prognosis but does not contradict the advisability of operation.

7. Treatment—Best results are obtained by removal of all adventitious tissue prior to the development of malignancy.

8. If malignant, radical excision plus extirpation of all lymphatic bearing tissue in both inguinal regions offers the only hope of cure.

BIBLIOGRAPHY

1. Neoplastic Diseases, Ewing.
2. Disease of Women, Crossen.
3. A Guide to Gynecology, Berkley & Boundy.
4. Am. Jr. of Med. Sciences, Dittrick.
5. Gynecology, Anspach.
6. Pelvic Tumors, Lynch.
7. Gynecological Trans. Am. Gyn. Society 1923, F. H. Falls.
8. Progressive Medicine, June 1924, John B. Clark.
9. Bull. Johns Hopkins Hospital, Dec. 1923, Brady.
10. Gynecology, Ashton.
11. Gynecological Disease, Findley.
12. Text Book of Practical Gynecology, Gillian.

—446 Aquila Court.

THE SURGEON'S RELATION TO THE NEWSPAPER*

J. W. Duncan, M. D., F. A. C. S., Omaha, Nebr.

(Editorial Note: While particularly discussing the surgeon's relation, the matter here set forth is equally as second class matter.

The points of contact between the surgeon and the newspaper must seem rather few. To be sure, every surgeon scans his daily paper, if for no other reason than to keep abreast of the developments in his science through Doctor Evans and Arthur Brisbane.

It is necessary at times, however, for community welfare and for civic advancement that they touch one another. This contact has not always been a pleasant one. Some of the reasons are evident. Others will bear discussion.

The surgeon must remember that the newspaper is a highly organized and a vitally important part of the life of civilized peoples. News is a commodity which it has for sale. In common with all efficient business organizations it must maintain a source of supply. In some instances it must supply itself from you or from me. Difficulties are born out of the fact that the professional relationship of the surgeon with his fellow man is most personal and confidential. His code obligates him to hold inviolate information that may be of great news value. I appreciate that there is a code of ethics in the newspaper world also. Perhaps it is as rigid as our own. I do not know its tenets but I believe it extends protection to only those of its own craft. I feel sure it imposes no curb on the insistent reporter.

A point of contact between our profession and the newspaper lies, of course, in community health and in education of the public on medical subjects. Newspapers are the greatest moulders of public opinion in our national life. We should take advantage of this to aid in the campaigns for better health that are constantly being fostered by the better class of newspapers through competitions, contests, prizes, etc. Sometimes such activities are so plainly finctured with advertizing and selfish ends that the reputable surgeon hesitates to align himself with them. But legitimate business principles recognize this mixture of selfishness and altruism and I believe some of the objectionable phases of this method of stimulating interest in public health might be eliminated if representative men in our profession gave their services freely and, if they wished, anonymously.

---

*Delivered before the Omaha Surgical Club, January 14th, 1925.

Pure food, good water, adequate housing and properly equipped dispensaries and hospitals are all subjects of good news value. They are likewise subjects in which surgeons have a vital interest. The newspaper man will, of course, turn to the doctor for information along these lines and for aid in movements for attaining them. The cultist and the quack and the advertising doctor are not the first persons consulted in such matters. But the newspapers are often forced to turn to them for more or less inaccurate data because the surgeon will not cooperate.

We are constantly decrying the growth of cults and heterodox methods of treatment but a large part of our trouble in this respect is of our own making. Modern man reads much and thinks little and the little he does think is upon subjects constantly on the printed page before him. We are disposed to hide our light under a bushel. Newspapers will give us equal space with quacks and fakirs if we request it. We should do this, if in no other way, then through persons in our profession authorized to speak for us. Newspapers should not use identifying data where anonymity is requested. In turn, doctors should recognize that information in medical subjects cannot be offered to the public in the same style employed in our scientific magazines. Newspaper diction is unequalled for brevity and clearness. But we have the right to expect that scientific truth shall not be sacrificed for readability.

Only through newspapers is the public kept informed on the host of bills affecting public health that are introduced into our state and national legislatures. Nowhere should there be closer cooperation between surgeons and newspapers than in this connection. But in legislative halls we have no headquarters to which newspapers can go for our views on these matters, we have no copy ready, we have no lobbyists, we have none of the trappings, we are devoid of the settings that make "good news". It is not to be wondered that two years ago in our state legislature the cultists, both those to whom all disease represents error and those to whom it represents vertebral subluxation got more newspaper space in one week than we got all through the session. This was, of course, our own fault. The passage of laws abolishing quarantine and opening state, county and city hospitals to all forms of quackery was narrowly averted. It was only belated publicity of the provisions of these proposed laws that finally killed them. This year a legislator has again introduced a bill proposing repeal of compulsory vaccination and one prohibiting "any public official or board from interfering with, or discriminating against, any person in the exercise of his choice in all matters relating to prevention, treatment, or cure of disease."

There are certain movements within our profession that are of public interest and which have good news value. There was sore need of elimination of the low grade medical college and of the raising of the standards of medical education. For that reason these movements were of considerable public interest. A few weekly and monthly magazines, reaching a selected class of readers, had articles on the subject. But to a great many people the Sunday newspaper supplies the only magazine that reaches the home. Newspapers were never told what a drastic dose we administered to ourselves and consequently there is no record in their readers mind of our valiant self physicking.

The movement to eliminate fee splitting and to raise the standards of hospital practice has secured much publicity. As far as my knowledge goes, the matter has been handled very fairly and intelligently by the papers. Indeed, I do not believe it could have been accomplished without their aid.

The administration of public charity is always a matter of general interest. Poverty and disease are so closely allied that it is unnecessary to point out the surgeon's interest here. Newspapers are to be lauded for the unselfish part they play in raising funds for charitable purposes. But, I believe, it is equally their duty to aid in their proper disbursal. There is great abuse at the present time in the solicitation and acceptance of free medical attention by those able to pay for it. I have observed that other cities have found it necessary to seek newspaper aid in curbing this abuse.

If there are certain abuses in our profession (or abuses that have grown out of it) that have been cured, or that are curable, by publicity, there are others that thrive upon it. A judicious mixture of acetanilid and newspaper advertising made our old friend, Doctor Miles, an immortal and a millionaire. Patent medicines have, however, ceased to be much of a menace to public health in our own country. A famous Austrian orthopedist recouped a large part of his lost fortune through the yellow New York press though I have always believed this old man was more sinned against than sinning. It is entirely unjustifiable and inexcusable, however, to raise hope of cure in the credulous minds of the helplessly crippled.

Perhaps it is because newspaper men do not understand the psychology of the sick as well as we do that they cannot see the cruelty in giving publicity to unproved remedies for incurable diseases. To announce to the world that a physicist has discovered the fourth dimension or that an engineer has successfully demonstrated perpetual motion is good front page material. If neither statement is true there will be few heartaches and no lives lost. But to broadcast that Doctor So and So has a cure for cancer without verifying his evidences or proving his statements is undeniably cruel. It is a gross perversion of the functions of a newspaper. Not long ago in our own city there was editorial comment unfavorable to our profession in connection with the establishment of a clinic for trial of a supposed cure for cancer. Unfortunately cancer sufferers are not so rare that it is necessary to advertise in newspapers to secure sufferers for treatment.

It is in the field of medical advertising that the newspaper appears in the most unfavorable light before the surgeon. The paper that sells its space to the medical quack is a party not only to mulcting money from a sick person but in many instances it is, such as in cancer, guilty of denying him hope of cure by delaying adequate treatment until it is too late.

Another point of contact, or it might, perhaps, be better called a point of friction between newspaper and surgeon is in the reporting of unusual accidents and injuries and serious illnesses, usually of prominent people. Here both patient and surgeon shrink from the publicity that is forced upon them. The public is entitled to certain facts in such cases. These usually can be covered in twenty or thirty word bulletins. But it is no part of a newspaper's duty to educate its readers in surgical pathology or in operative technic. We doubt if the news editor himself would relish a reporter's description on the front page of the tumor removed from his wife's abdomen. Neither would he feel exactly comfortable to see it announced to the world that he had undergone an operation for prostatic enlargement. It would invite too many unwarranted conclusions. He would then appreciate that news, under certain conditions, becomes notoriety.

Part of the surgeon's reluctance to be quoted is pure self defense. All of us will testify that the most simple and scientific statement of medical fact looks like a cross word puzzle when the reporter and the proof reader have "polished it up".

There is not, and never can be, any close relation existing between the surgeon's daily professional work and the newspaper. There is a relationship existing between the surgeon and the newspaper in connection with matters of public health, medical education and various extra professional activities. That this is not as close as it should be is our own fault and not that of the newspaper.

— 1520 City National Bank Bldg.

GROUP PRACTICE IN THE SMALLER COMMUNITIES*

D. D. King, M. D., York, Nebr.

The subject of this paper was suggested by certain questions recently sent out from the office of the Nebraska State Medical Journal and whose summary of answers appeared in the Journal of December 1924.

The answers to Question IV, "What is your opinion of group practice?" were "vicious", 65; "theoretically ideal," 76. I do not know how to interpret the word "vicious" but am surprised at the percentage of such replies. I can see nothing vicious in this grouping together of a number of physicians, who desire to improve their own efficiency and give better service to their clientele. On the other hand if they organize with the primary purpose of increasing their fees with no regard for better work or better service, then the term "vicious" would be appropriate.

"Theoretically ideal" is an excellent answer, but implies doubt as to the practicability of such grouping.

However, the answers to the next two

---

*Read before the Elkhorn Valley Medical Society, Fremont, March 17, 1925.

questions "Is group practice practical?" and, "Does group practice serve the best interests of the public?", show a preponderance of affirmative answers which more than offsets the "vicious and "theoretically ideal" opinions.

Group medicine has come into prominence in late years and is simply an evolutionary condition in the progress of the medical profession. Its status is still unsettled and is the cause of considerable controversy; principally between the general practitioner and the specialist. The former feeling capable of diagnosing and treating the majority of his cases, the latter believing that much error is committed by the inability of the general practitioner to become familiar with all the diagnostic and therapeutic methods of the present day.

Both are in a measure correct, and I shall try to show how a small group in a small community can function, with benefit to both themselves and the public.

My opinions are based on the experiences of one small group which has had many failures and a few successes.

The number of physicians comprising a group will depend on the number available, the size of the community and the wishes of those concerned. Granting that each physician takes one branch of medicine as his major effort then the more physicians involved, the greater the field. However, the minimum should be at least four. These may be classified according to their individual attainments or desires of the group.

A surgeon, internest and E. E. N. and T. specialist are indispensable. The fourth may specialize in x-ray and physiotherapy, urology, laboratory, pediatrics or other branch. Pediatrics is a happy choice, since this branch is most important and one of the most neglected and abused in small communities. The branches not covered specifically can also be distributed so that they are capably administered.

This minimum of four men gives a working force, sufficient to take care of any operative or other procedure.

The members of the group cannot practice their specialty in exclusion of other things. Early in the group formation especially where the members have been located for some time, each shall continue to take care of his usual practice referring to the other members in selected cases. In this way all are kept busy, sufficient income is received, and contact with the greatest number of patients is maintained. Ultimately, a gradual evolution will take place, and each member will find his time more and more taken up with his particular specialty.

Physicians like all other professions or businesses need money, and the question of finance is most important and must be settled first.

I am not going to discuss the various plans for group formation, but will state that our experience shows that the best plan in a small organization is a partnership; at least partial, quickly leading to a full partnership.

The advantages of a partnership are chiefly:—Stability, equal responsibility and elimination of competition.

The stability of an organization must depend primarily on the personel. A partnership lessens the chances for a changing membership, on account of the equal division of fees and the individual investment. Of course, cooperation and unselfishness are essential within the group, and these are encouraged by the financial and professional equality of the members. This plan also eliminates the salaried man, who has not proven satisfactory. If he is capable and agreeable he will not continue on a salary or salary and percentage basis; and in any other event he would not be wanted.

Equal responsibility must necessarily follow a partnership and this increases the interest in both the business and professional cares. The various phases of the business side can also be distributed among the members subject to supervision by the group.

The question of competition is practically eliminated, because of the equal division of fees and the individual desire for group success.

There is no hesitation on the part of any individual to refer his patients to other members of the group, for he still remains in contact with them, and shares alike in any fee obtained.

I would like to state further that our experience shows very little difference in the earning capacity of the different men. The referring of cases to each other and the mutual help given, will show over a period of time, that each individual is of about the same value to the group. Also that there is not much difference in the time each one devotes to the work.

There are other advantages of group practice, principally less overhead expense and better ethics.

Less overhead expense must necessarily follow the concentration of floor space, rent, heat, light, assistants and especially equipment.

The equipment can be elaborated, since the necessity for reduplication, of laboratory, x-ray, etc., is eliminated.

The possibility of better ethics is materially increased on account of the association of individuals. It would be hard to group 4 or 5 physicians who were all willing to ignore the ethics of their professions and deliberately circumvent the statutes of the state —the fee-splitter and the fee-taker will thrive in spite of you but like Ponzi and Koretz their ill-gained gold will result in final humiliation and punishment.

Better service to the public is assured by the more complete equipment, case assignment, and ease of consultation with little or no additional expense. There are many communities in Nebraska where the people are denied the advantages of a complete diagnosis without traveling many miles to the larger cities, which in many cases is not advisable.

The majority of general practitioners do not have the time or equipment to do blood work, gastric analyses, make radiographic and fluoroscopic examinations or other technical procedures.

A group situated in these smaller communities would solve this question by bringing a diagnostic and consulting center closer to the patient without the expense and dangers of a long journey. It would also benefit the individual practitioner, who could keep in touch with his patient and have the counsel of the group.

In conclusion let me repeat that by the grouping of at least four physicians, the vast majority of the patients in any community can be given the best of service, with minimum expense to themselves and with the greatest satisfaction and least overhead expense to the Doctor.

FRACTURES OF THE LOWER THIRD OF THE LEG*

J. E. M. Thomson, M. D., F. A. C. S., Lincoln, Nebr.

A review of our series of fractures of the lower extremities show that about twenty per cent of them occur in the lower third of the leg. They comprise two types: The first, those of the shaft occurring above the ankle joint, and the second, those into the ankle joint. Most of these fractures are due to indirect violence; however, there are a certain portion of them which occur due to direct violence, due probably to the fact that we have an ever increasing number of automobile and street car accidents. These are usually of the comminuted type with much displacement of the fragments and are often compounded. Many of them occur due to twisting or turning the body on the leg as a fixed pivot, resulting in the spiral or oblique type of comminution.

According to recent observations in various clinics this type of fracture is more prone to develop delayed union which may result in non-union or mal-union than any other type of fracture of the lower extremity. Those into the ankle joints are often the cause of wide ankles, stiff ankles and severe pronation deformities of the feet. These types of fractures, therefore, deserve very careful and accurate care in order to prevent serious disability to the entire extremity. The reduction and treatment of fractures in general embodies the fixation of the controllable fragments in line and apposition with the uncontrollable. This is accomplished by manual manipulation and in some cases the added factor of traction is needed to bring about length, proper alignment and apposition of the fragments. When once reduced these are held by means of casts and splints.

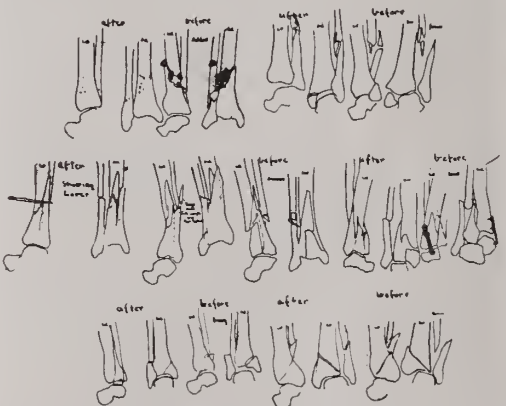


FIG. 1. A few of the various types of fractures of the lower third of the leg which have been considered in this series showing particularly the typo involved.

Medical museums are filled with various types of splints and devices for reducing and treating fractures, dating almost to prehistoric time and it is my belief that many such devices now in use could be relegated to this same historical scrap heap. Nature has been kind to us in giving us the instinct of fixation which indeed has been the foundation of all primitive fracture treatment. The lower animals honor its effectiveness and splint their injured leg with strong muscular contraction until healing has taken place. However, most of the deformities we see in domestic animals are those which occur in the lower portion of the leg, because they have no large muscles there to protect the fragments. These same factors apply to the human as fractures of the lower leg are protected only by tendons and ligaments.

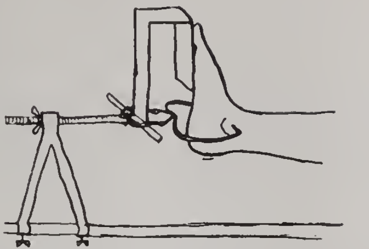
---

*Presented before the Fillmore County Medical Society, Geneva, Nebr., Dec. 9, 1925.

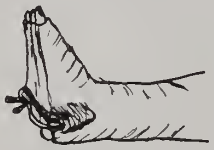
Those fractures of the leg into the joint, of the Potts' or Dupeytron's type, can usually be reduced and held by simple manipulation and fixation. However, there are certain fractures in this region with profound comminution which at times require rather extensive operations to reduce and bring into alignment. There are those fractures of the shaft of the oblique and the spiral type which are difficult to reduce by the ordinary traction. Direct traction of the fixed variety previously described gives the best opportunity for securing proper alignment of the fragments as it can be inverted and everted, rotated, etc., which is so essential to bringing proper position.

In the treatment of many of our fractures of this type we have found it necessary in order to attain proper alignment and apposition, to use what we speak of as direct fixed traction. By that, is meant traction which applied at the time of the operation, so imbedded in the fixation device that it remains unaltered and undisturbed the entire time of preliminary treatment or until healing has taken place. Being actually fixed in the plaster cast makes it impossible for the position to be lost.

For direct traction we use a pin through the os calcis or ice tongs on the external or internal maleoli. The technique of imbedding the traction device in the plaster cast for fixation is described with the illustrations. Of those fractures which we have treated with this method and which now number twenty-four cases with no shortening and uniformly good results. Without the use of grafts, wires or pads or any nonabsorbable material and only the simplest operative procedures having been followed; we feel that this method of treating fractures of the lower third surpasses any other we have had occasion to use.



No I Ice tongs applied above maleolii and attached to pulling device of Fracture table



No II Ice tongs embedded in cast

FIG. 2. Method of applying fixed traction by means of ice tongs in the treatment of fractures of the lower third of the tibia and fibula particularly those fractures involving the lower third of the shaft of the bone.

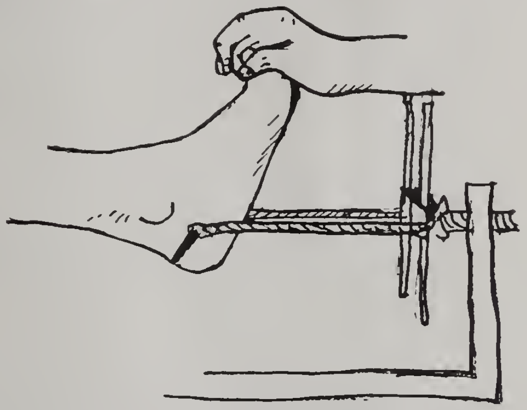


FIG. 3. Illustrating a pin through the calcanium. Ropes attached around the pin to the traction device of the fracturo table, the assistant's hand giving the amount of inversion or rotation desired.

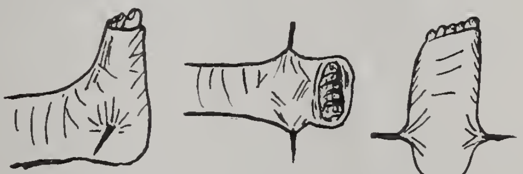


FIG 4. Three positions of the foot to illustrate the appearance of the pin through the os calcis imbedded in the plaster paris cast in the application of fixed traction.

A study of the illustrations describes the technique followed in the application of direct fixed traction.

"My college education was my kit of tools", said a man speaking of his business life. That is the purpose of education in all its forms—to be turned into activity and become of use in life's work. Knowing is of little value except as it helps in life's doing.

UNUSUAL MENSTRUAL HISTORY IN THREE GENERATIONS

L. J. Owen, M. D., Lincoln, Nebraska

I do no obstetrical work but when some of the following facts came to my attention through other channels I thought them of sufficient interest to investigate further and record.

CASE I

The patient is a woman thirty years of age, has been married four years and at present general health is good. It was through her skin condition that my attention was directed to glandular hypofunction. There was no history of any skin disorder, other than simple infections, until about two years ago when a severe attack of urticaria developed, which was traced to the eating of certain nuts of which the patient was quite fond and had eaten large quantities for years. During her recent successful pregnancy an evanescent and fine folliculopapular dermatitis with pruritic symptoms developed. Associated with this the skin was abnormally dry. I attributed the condition to insufficient thyroid function to meet the ordinary demands of the body plus the added needs of gestation. The condition cleared promptly on the administration of thyroid tablets, one quarter grain twice daily. Intermittant thyroid therapy was continued throughout pregnancy and the patient remained free from further disturbance of the skin.

Past History. The patient has had the usual childhood diseases. Menstruation began at thirteen years of age, was painful at first and more normal after a few months, though always profuse. At fourteen years of age she suffered an attack of appendicitis with subsequent rupture of the abscess, and prolonged convalescence. Following this there were felt abdominal and pelvic pains which were attributed to peritoneal adhesions, and menstruation seemed more painful and prolonged. The periodicity was twenty-four to twenty-eight days. Coincident with tonsilar infection and some degree of arthritis, with lowering of the general health the menorrhagia became even more severe and at times left the patient in a weakened condition from loss of blood. Local tampon treatment with the usual failure of benefit was carried out at intervals. A tentative diagnosis of cholecystitis, and a laparotomy which failed to show any abdominal pathology beyond peritoneal adhesions in the right lower quadrant was done when the patient was twenty years of age. At twenty-three years of age a laparotomy with anterior uterine fixation was done in a vain, and I think ignorant attempt, to alleviate the severe menstrual discomfort. The patient stated that she suffered, as might be expected, a great deal more after the operation than she had ever done before.

Following marriage children were desired but there was no evidence of pregnancy until about one and one-half years later when the patient noticed that her breasts were enlarging, the areola was more marked and there was fluid present. Pelvic examination at this time revealed what was probably a ten weeks pregnancy. The menstruation just previously had been at the expected time and of usual amount and duration. The next menstrual flow appeared at the time that it would have been expected without pregnancy present, was as usual for two days when unusually profuse bleeding occurred with discharge of large clots and accompanied by pain as severe as many labors. Following this it was ascertained that the pregnancy had aborted. During the next two years pregnancy occurred three times, each resulting as had the first except that the pains due to tension on the adhesions from the uterine fixation became less severe in the latter instances. One abortion happened at probably the fourth menstrual flow instead of the third, following conception. The patient was by this time quite discouraged and pessimistic regarding her ability to have children. During about two years of this time corpus luteum substance was administered by mouth, one five grain tablet daily, and three daily for a few days preceeding menstruation. The patient stated that she had experienced considerable relief from the excessive flow and pain, and that the period had become a regular twenty-eight day interval, with the duration of flow four or five days as before. At no time during the period described above had there been any irregularity of the catamenia that would indicate pregnancy, previous to the occurrance of the abortions. There was nothing about the patient or her family history to indicate syphilis. A blood Wassermann was done three times, one following the so-called provocative salvarsan. All were returned negative.

On account of the association of corpus luteum with menstruation and pregnancy, and the fact that animals will abort when the luteal body is removed, a corpus luteum deficiency was considered, the administration of this substance pushed and the patient told to take absolute bed rest during menstruation. A few months ago she was delivered of a normal female child at an estimated duration of pregnancy of forty-three or forty-four weeks, having missed but seven menstrual periods.

CASE II

The sister, fourteen years the senior of the above patient. This woman was a trained nurse and able to give me a clear account of her menstrual history. This began at fourteen years of age, was scanty at first, later profuse, always accompanied by severe pain and usually clots. The periodicity was quite irregular, varying from fifteen to twenty-five days and of several days duration. She was married at twenty-eight years of age. During the four years following marriage she thought several times that she might be pregnant though there was no cessation of the menses at any time. The times when it was thought that pregnancy might be present were terminated by excessively severe menstrual flow, pain equal to that suffered by many women at parturition and the passage of large clots. No careful examinations for fetal tissue were made.

Four years after marriage this woman became convinced that she was pregnant though the physician called at that time refused to make that diagnosis because of the menstrual history which was that of having missed no periods of flow. His diagnosis was ovarian cyst and an infantile uterus making pregnancy impossible. Against his patient's wishes a trocar was introduced through the abdominal wall and about two liters of fluid withdrawn. The patient declared that she could hear the fetal heart beat by means of the stethoscope, removed to the home of her mother in another city and there a diagnosis of pregnancy of about twenty-four weeks was made. She was delivered at term of a normal female infant. In spite of the withdrawal of amniotic fluid the latter weeks of this pregnancy was complicated by the presence of an enormous hydramnios. There were but two calendar months of amenorrhoea, previous to parturition and less than that following.

CASE III

The mother of the two preceding patients, now sixty-eight years of age. She has had six pregnancies, five of which terminated successfully. The fourth terminated at the twenty-fourth week with the birth of a premature female infant that lived a few minutes, the patient having missed no menstrual periods throughout the gestation, and premature labor occurred at the expected date of menstruation. In the first pregnancy she did not know that she was in such condition until gestation had progressed to about the third month when the menses ceased. In the other successful pregnancies menstruation continued until the third month and one to the fourth month following conception. Three of the full term deliveries were male children.

CASE IV

The sister of the patient described as case three. Age now sixty-five years. The menstrual history was almost a duplicate as regards the dysmenorrhoea and menorrhagia exhibited by her sister. There were two known pregnancies in this case, one ending in abortion. The other continued to term with the delivery of a normal female infant, the patient having missed but six menstrual cycles. The advent of the menopause was a relief and welcome event in the lives of the two last cited cases.

The one child, a daughter of the above patient is unmarried, and no information relative to her menstrual history is obtainable except the remark that she suffers considerable at the time of the menses.

CASE V

The grand-mother of the patients cited as cases one and two. Information relative to this case was had from her elder daughter and no very detailed history was obtainable. There were four successful pregnancies, two male infants and the two daughters mentioned. That there were other pregnancies with abortions as occurred with her daughters and grand-daughters cannot be stated, but her menstrual history was that described for her female descendants as to uncertainty in pregnancy, dysmenorrhoea and menorrhagia.

The fact that her own menstrual history was a repetition of that of her mother made the woman of case three feel that her daughters would show the same characteristics, and upon their marriages she warned them that they would not be able to judge of the presence of pregnancy by the onset of amenorrhoea. Her predictions proved correct in both instances.

There is no evidence obtainable to show that the characteristics described extended farther back than the three generations. The great-grand-mother died at the time of her seventh parturition. This of course indicates nothing as to the character of the menstrual history.

Placenta praevia did not play a role in any of the above cases. In the successful pregnancies the uterine flow stopped in the latter months when that condition would become operative. The bleeding was not continuous nor intermittant in an irregular manner. The flow would start at the time it might be expected in the non-pregnant uterus and continue for the time usually experienced. In every instance where abortion or premature labor occurred it happened at a regular menstrual period. Menstruation began as usual, continued for a day or two and then the uterus emptied itself. In those instances where the normal amenorrhoea appeared the pregnancy continued to term and a normal infant was born.

In the first case cited the resistance to uterine enlargement consequent on the anterior fixation done some years previously may have been a factor in decreasing the chances for pregnancy to continue, but probably would not in an otherwise normal economy have caused the loss of uterine contents. This factor did not function in the previously occurring cases.

It has long been held that the function or one of the functions of the corpus luteum is to produce a cessation of the menses during gestation, and a period of time following. Bandler, in "The Endocrines", states that the mechanism whereby this is in part accomplished is the inhibition of the pituitary by luteal body products. He says, "We know little about the secretion of the follicles, yet they probably nourish the uterine lining. It is true that subsequent ovulation in pregnancy is interfered with by the corpus luteum, so that pregnancy may not be interrupted by menstruation."

That there was a moderate degree of hypothyroid function during pregnancy in the first case is unquestionable. This patient feels that she was greatly benefited as regards the dysmenorrhoea, menorrhagia and irregularity by corpus luteum therapy, though her mode of living during the time that it was administered was such that there was reason to expect improvement in her general health over what it had been in previous years. That it was the administration of corpus luteum that made it possible for her to continue through pregnancy successfully cannot be said. I am not making the fallacy of drawing conclusions from one case. It might have proven interesting could it have been possible to make observations on the use of corpus luteum in all the cases here cited.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
1012 Terminal Building, Lincoln, Nebraska.

F. A. Long, M. D., Editor..........Madison, Neb.
R. B. Adams, M. D., Associate and Business Manager..........Lincoln, Neb.
1012 Terminal Building, Lincoln, Neb. Tele. B2625.

COMMITTEE ON JOURNAL AND PUBLICATION.
F. A. Long, Chairman..........Madison
W. O. Bridges..........Omaha
B. F. Bailey..........Lincoln
R. B. Adams, Ex officio..........Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, not the carbon, submitted.

Reprints should be ordered from the printer, The Huse Publishing Co., Norfolk, Neb.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. X June No. 6

THE NINETEEN TWENTY-FIVE, LINCOLN SESSION

Revival of interest in medical society work was manifested in the annual meeting of the Nebraska State Medical Association held at Lincoln, May 12-14th. Registration was unusually large the first day, keen interest was noticeable in all the scientific work as well as in the House of Delegates, and a spirit of good fellowship prevailed throughout the meetings.

The first forenoon was devoted to dry clinics in which so much interest has been shown the past few years and this feature measured up to the standard.

The address by Dr. William Englebach, St. Louis, on "Ductless Gland Disorders" was a revelation and was one of the oustanding features of the meetings.

Dr. Lee Wallace Dean, Iowa City, was unable to be present because of acute illness.

The sectional addresses of Dr. John B. Potts, Omaha, and of Dr. Lucien Stark, Hartington, were masterpieces in their respective lines.

Perhaps the oustanding features of the program given by Nebraska men was the three papers on the gall-bladder, by Dr. J. E. Summers, Omaha; Dr. Max Emmert, Omaha; and Dr. Clarence Andrews, Lincoln.

Nearly all the essayists were present, all the subjects were presented and the sessions for the most part were well attended.

The House of Delegates accomplished much work with great ease. Dr. E. W. Rowe was elected president, pro tem, and presided over the meetings part of the time. One rather radical measure was put through the House: The annual dues was raised from five dollars to eight dollars. It was explained that more money was needed for public activities so that scientific medicine, (to use the efficiency man's jargon), may be sold to the laity. While cultists raise almost unlimited funds for advertising and lobbying purposes, our state medical organization has heretofore collected pittances. The Committee on Public Activities, created several years ago, cannot well function without funds, the Medical Defense Fund is in need of more money to carry on the work brought about by an increasing number of suits for malpractice, and a full-time executive secretary is hinted at as a development of the future. This matter will be discussed in the Journal later.

Dr. Palmer Findley, in the presidential address discussed "Medical Education and the Family Doctor" with much vigor and gave a keen analysis of what he conceives the demands of the present to be and the remedy. Whether right or wrong it seemed clear that the audience shared the president's viewpoint.

The annual banquet, Wednesday evening, was attended by more physicians and their wives and sweethearts than have attended similar functions for many years.

The Lincoln Chamber of Commerce tendered a spring chicken dinner to 200 members of the Association, Tuesday evening, which was followed by an entertainment of unusual merit. Those attending gave a silent, unanimous vote of thanks to the Lincoln Chamber of Commerce.

The secretary reported 1177 paid up members and suggested that probably fifty more would pay.

The registration totalled 348 members; probably fifty failed to register.

Dr. H. J. Lehnhoff, Lincoln, was made president-elect for 1926.

Dr. A. J. Cramp of the headquarters of the American Medical Association, Chicago, spoke to a lay meeting in the ball room of the Lincoln Hotel, Thursday evening, on "Quacks and Nostrums".

The local committee of arrangements composed of a number of the younger men of the profession, full of the pepper and sauce of early life, handled the difficult situation with great tact.

A Women's Auxiliary of the Nebraska

State Medical Association was organized by the doctor's wives present. Mrs. F. A. Long, Madison, was elected president and Mrs. Clare Rubendall, Omaha, secretary-treasurer. This is in response to a movement fostered by the American Medical Association, several other states having already organized and others are contemplating organization.

THE DRIFT OF DOCTORS IN NEBRASKA

Are the doctors of Nebraska drifting from the rural districts to the cities? A glance at the following survey will throw light upon this mooted question.

In this survey a comparison was made between the A. M. A. directories of 1906 and 1925. In this interval many factors have arisen in the experiences of the practicing physician: The automobile has replaced the horse, the roads have been improved, hospitals have been established in various parts of the state and the world war has created many vexed problems.

It will be observed that we are not turning out doctors in proportion to the increase in population of the state; that the percentage increase in population has been greatest in the towns of 1000 to 2500 and the percentage increase in doctors has been proportionately less in the towns of less than 1000 and more than 2500.

The outstanding revelation in this survey is that our cities are becoming overcrowded with doctors. Will the tide not of necessity turn?

1906 — Population State	1,098,139
1925 — Population State	1,296,372
Total Increase	198,133
Percentage Increase	18%
1906 — Total M. D.'s	1,668
1925 — Total M. D.'s	1,913
Total Increase	201
Percentage Increase	12.9%

Towns 1000 and Under

1906 — 141,096	523
1925 — 156,087	825
Total Increase Population	14,991
Percentage Increase Population	17%
Total Increase M. D.'s	302
Percentage Increase M. D.'s	17%

Towns 1000 to 2500

1906 — 73,232	256
1925 — 114,695	305
Total Increase Population	41,463
Percentage Increase Population	56%
Total Increase M. D.'s	50
Percentage Increase M. D.'s	19%

In all towns up to 2500 the increase in population is 36.5% and the increase in doctors is 18%.

Cities 2500 and Up

1906 — 272,396	587
1925 — 404,858	1,093
Total Increase Population	132,262
Percentage Increase Population	46%
Total Increase M. D.'s	506
Percentage Increase M. D.'s	86%

—Palmer Findley.

STATE OR PRIVATE LABORATORY

Many factors will account for the birth of the various specialties in medicine. Among the indisputable ones is the rapid progress we have made in the medical sciences and the development of numerous instruments, methods, and of various kinds of apparatus for testing body functions and for applying them in the daily practice of medicine.

It is true that in the early stages of specialization men were developed merely into rectal experts, throat experts, chest examiners, etc. However, the specialist of today has learned that to render the most service to his patient he must needs correlate symptoms as they effect the human body as a whole, and not merely the small part of the human anatomy he has been devoting his attention to.

As McCarthy has aptly said: "The specialist should not only be a brick layer who lays bricks after he has been told where to put them, but must perforce, remain the architect in medicine who studies not only brick laying but everything else about construction, strength of materials, etc, etc."

Clinical pathology constitutes the youngest branch among the specialties in medicine; it has advanced from mere execution of technical laboratory procedures to where a clinical pathologist must possess fundamentals of clinical medicine as well, for proper evaluation of results; in other words the clinical pathologist is not only an expert technician but renders judgment upon his results as they apply to the patient.

The trained surgeon and clinician realize full well that constructive medicine and surgery was made possible through proper advances in clinical pathology. As Dr. W. J. Mayo expresses it: "Today, through the aid of various clinical laboratories, the surgeon works with the eye of the microscope. Pathologic processes are discovered in the early stages of development with the result that operative procedures can be followed when deviation from the normal physiology is least gross, and surgery has become constructive in its general tendency". Need we dwell upon the essential part clinical pathology plays today in diagnosis. Take, for example; the doubtful case, where the removal of a piece of tissue under local anesthesia from a superficial gland, or thick umbilicus, when subjected to microscopical examination, will reveal the true nature of the condition and also will indicate the proper methods of procedure. The patient is thus saved unnecessary expense of being run through the mill, and the clinician often gains valuable time. Of course, the opinion rendered must be by a trained clinical pathologist, to be of any value. But whence to get physicians who will choose to enter the field of clinical pathology as a life work and consequently will become proficient in their line?

The young graduate of today seeks more lucrative fields in the practice of medicine and if he fulfills the function of a clinical pathologist, it is merely as a stepping stone for either internal medicine, surgery or some other specialty. That there is a great dearth of trained clinical pathologists is too well known.

Is it not timely to ask ourselves how clinical pathology will be perpetuated? It is not an indictment against our profession that the number of clinical pathologists is diminishing rather than increasing? What inducement do we offer to young men to stay in this field?

Within the last few years the clinical pathologist has been constantly deprived of his material and just financial remuneration by the various state or federally subsidized institutions. These latter have entered in competition with men that have made a specialty and life work of clinical pathology. By patronizing these institutions are we not driving a wedge into state medicine?

If the state can perform Wassermann tests today, why not do x-ray or fit glasses, or examine chests tomorrow? If one branch of medicine can be carried on by the state why not other branches as well. We must not overlook the fact that everytime we refer a specimen to the state, we drive one more nail into the layman's psychology of state medicine.

The president of the State Association has told the writer that recently he was asked to endorse the policy to examine at every county fair free of charge all applicants up to eighteen years of age. He rightly said that if they are going to examine children to eighteen years of age, why not from eighteen to eighty years of age? Where shall we draw the line? Is this not another step towards state medicine? We are busy fighting the cults. A prominent physician said the other day: "I shall have nothing to do with another doctor that patronizes the Osteopath, Chiropractor, etc." By doing this we will place medicine on a higher level". What a contradiction; the same doctor does not refuse to associate himself with the State Laboratory, of which he is a rather constant patron; a place where a member of any other cult may send Wassermanns, etc.

Another consideration of great importance is the question of reliability of laboratory reports as presented to the profession in a "canned like fashion", this is a point that has caused many a professional shipwreck. It is unfortunate that many physicians give little or no attention to the qualities of those to whom their laboratory work is entrusted.

When the laboratory work consists of simple blood and urine examination, an error may do little or no harm, but the chances of harm that result from erroneous Wassermann reactions, tissue diagnosis and various bacteriological and x-ray examinations may be considerable, and, indeed, with the Wassermann reaction may be incalculable in relationship to the domestic life, health and future happiness, and peace of mind of the patient.

Physicians do not realize the many chances for error that may be in laboratory work. To many, a test is a test—regardless of by whom or how it is made. We must realize that laboratory diagnosis is a part of a diagnosis in general; that it is capable of giving information of value; provided the interpretation of same is made in conjunction with the clinical facts of the case. The man interpreting laboratory results must be a physician that has a fundamental knowledge of medicine.

The time has come for the conscientious physician to ask himself the question, "Am I for State Medicine or am I for private medicine? Have I the interest of my patient at heart, or am I following the short sided policy of being penny wise and pound foolish?"

The answer will be judged by his actions. Is he patronizing the state laboratory or the private physician that specializes in laboratory work.

— * * *

CONGRESS OF MEDICAL COUNCILS IN CHICAGO, MARCH, 1925

Far too few of the doctors busily engaged in actual practice, know or care how the organized machinery of the American Medical Association operates. They are so all-engaged in their practice activities, that little time is left even for domestic or civic functions, let alone the modus operandi of the great American Medical Association.

This great organization heads up nominally under its president and other elected honorary officers. In an executive manner, it heads up under a full time secretary and general manager, a full time business manager and a full time editor. Many other assistants in various capacities serve on a full time schedule also. The various State Medical Associations elect the house of delegates and these elect the Board of Directors which functions in cooperation with the above officials.

Different problems such as Medical Education, Hospitals, and Pharmacy, for example. are assigned to special councils. A Congress of such councils had its annual meeting in Chicago in March. It was the Congress on Medical Education, Medical Licensure, Public Health, and Hospitals. This is a permanent organization with a partial annual change in its personnel of officers and with an ever changing program according to the needs of its various problems. The Nebraska State Medical Association sends its delegate, as do many other states.

Through the deliberations of this Congress, many of the tasks of the American Medical Association are solved. This is because of the fact that the Congress deals with fundamentals and real constructive plans. It does not subordinate in any degree the importance of the clinical aspects of the association. No one questions the first-rank position of the clinical and experimental aspects of the problems of the A. M. A. The activities of this Congress are fundamental because they deal with the correct making of future doctors, the correct governing of the practices of the profession, with public health problems and the standardization of the institutions where these doctors practice (hospitals). No small part of the work of this Congress is to bring about such activities in a manner which is coordinating and cooperative.

This year the program of the Congress contrasted conditions as they have existed during the past two decades. It was most interesting to note the many changes and advances. One can readily imagine the magnitude of the change when we recall that the number of medical schools has decreased in the United States in the past twenty years from 160 to 80. Another most interesting generality is shown in the estimate that medical education in America today is just reaching a par with that of the other first-rate civilized nations.

A more detailed report will appear in the Proceedings of the Annual Meeting of the State Medical Association.

—J. S. Welch.

WILSON AND COCHRAN'S FRACTURES AND DISLOCATIONS

The new book on Fractures and Dislocations, by P. D. Wilson and W. A. Cochran, which has just come from the publishers is sure to attract a great deal of attention. The book is truly new in a sense which has been applicable to no book on fractures for a long time. It has been written without much reference to, in fact one might say, in complete disregard of nearly all the authors of fracture books with whom we are familiar. Such well known authorities as Scudder, Hamilton, Ridlon. Preston, Albee, Keen, Bardenhauer, Hey Groves, Harry Sherman, Estes and many others, are not even mentioned, or if mentioned at all, referred to only in connection with minor points of technique.

The methods, or at least the technical procedures popularized by our war experience, some of which are new, are all carefully described. In the opinion of the writer of this review, some of the details described at considerable length are relatively over done but it is only fair to say that, on the whole, this book appears to be the best book on fractures in print at the present time. If the practice of the profession at large could be guided by the anatomy, pathology and technical methods all so carefully described in this book, our results in the treatment of fractures would immediately improve by many degrees. Such a book has been greatly needed.

While perhaps a little more credit should be given to the older writers, certainly the authors have done will to discard in large part those paragraphs and chapters which have been copied from one book to another for such a long time. Certainly one may say emphatically that we have no other text book or reference book on fractures that will so nearly at the same time satisfy the highly trained general or orthopedic surgeon and the general practitioner who is looking for help in individual cases.

The anatomy, mechanics, and pathology of every type of fracture are discussed in the most complete and careful detail. The illustrations are numerous and excellent. In fact, for profusion of cuts and for care in their selection, the book is hardly to be surpassed.

The writer of this review is not in perfect accord with the authors as to the important place accorded to the Carrell-Dakin method in the treatment of compound fractures. It was observed during an extensive experience with these patients in Military hospitals as well as since, that length, position and immobilization have frequently been sacrificed in the supposed interest of wound treatment. Both in the Military hospitals and in civil practice, as pointed out in this book, physicians and surgeons frequently fail to master the Carrell-Dakin technique, consequently we often see compound infected fractures in which neither the mechanical nor the Carrell-Dakin treatment is adequate.

Close adherence to the instructions of the Wilson-Cochran book, however, will point the way to much greater success along both these lines. Splint control, correct position and final healing with a careful regard for usefulness of the injured part are the important things, and to such results the instructions contained in this volume certainly point the way.

There are a few minor points in this work with regard to which additional emphasis or discussion might contribute something. Albee and Hawley, the former especially, have made notable and extensive contributions to fracture treatment. Albee's work, much of which has been of considerable significance, is not referred to and Hawley is mentioned in connection with his fracture table only in connection with the Whitman method in fractures of the neck of the femur. In the treatment of shoulder and upper arm injuries considerable time and space are devoted to the straight hinge ring Thomas splint. This is a splint which if used in the arm beyond the period of transportation is associated with some risk. Length is fairly easy to obtain with the traction method described. A common fault in the use of this splint is that rotation of the distal portion of the fracture fragment is not always properly controlled. Moreover, fixation in such a splint over a long period, especially in compound fractures of the humerus leads to an amount of fixation of the elbow which is highly undesirable. Greater emphasis upon the use of the body cast with an extension to the arm which should be in abduction, elbow flexed and hand supinated would seem to be desirable.

In the matter of the late treatment of Colles' fractures it is believed that it is more frequently possible to correct deformity by manipulative methods than is suggested in this work. The method to be employed, however, is exactly the same as described, namely, either manual reduction up to six or eight weeks after injury or the use of the Thomas wrench after that. Entirely successful corrections have been made at all stages quite commonly as late as four to six months after the injury.

In making such comments as the above, however, it is not the intention of the writer to detract in any way from the high opinion in which this book is sure to be held. It was his privilege to be associated with Major Wilson for many months in the care of the American wounded in France. All of the originality, industry and intelligence which Major Wilson is so well known to possess, have been employed in the production of this excellent work. In fact, it might be assumed that this book is a direct response to the request of Colonel Sir H. M. W. Gray, who is occasionally referred to. In writing a preface for the work on "Fractured Femurs" by Pearson and Drummond, Colonel Gray gave utterance to the following: "My experience, both in France and in Home hospitals, compels me to say that the teaching of the principles of treatment of fractures in general and of the practical application must be vastly improved if ordinary justice is to be done to the fracture cases in the future. The results of treatment of such cases by those who have become experts in dealing with serious war injuries show that, by careful attention, the frequent deformities and consequent incapacity which used to follow comparatively simple fracture of civil life are preventable, and should be looked upon usually as being due to incompetence or inattention on the part of the responsible surgean."

Wilson and Cochran have certainly given the best and the most complete reply to this demand that has appeared in print since the war. — H. W. Orr.

CLINICAL FEATURES OF HEART DISEASE

A volume of 250 pages, bearing the above title by Dr. Leroy Crummer, Omaha, has just come off the press of Paul B. Hoeber, New York.

Dr. Crummer starts out with the two propositions, that a diagnosis of valvular heart disease does not imply imminent or sudden death and that decompensation is a diagnosis which should be made early. Proper history taking is stressed and a chapter each is devoted to inspection, palpation and auscultation. Without decrying mechanical means of making a diagnosis of heart affections, Dr. Crummer places much stress on the ability to make a diagnosis of heart disease by the unaided senses. He is, therefore, not a diagnostic aristocrat and has not forgotten the lessons taught by his very wonderful father, the late Dr. B. F. Crummer, a noted Nebraska clinician of the old school.

Chapters are devoted to cardiac irregularities, mitral disease, disease at the aortic valve, adhesive pericarditis, cardiovascular renal disease, decompensation, treatment, cardiac neurosis, cardiac emergencies. The paper and mechanical execution are above the average and help to make reading easy. The profession of Nebraska will be interested in Dr. Crummer's contribution to the study of the diseases of the heart.

THE STATE BUREAU OF HEALTH NOTES

The Bureau of Health is now installed in well arranged and roomy apartments on the north side of the new Capitol.

Mr. L. O. Vose, who for some six years was Director of the Bureau of Health Laboratory has resigned to take up commercial work. His successor is Miss Lila B. Love, former assistant in the laboratory.

EDITORIAL PARAGRAPHS

Professor August V. Wassermann, discoverer of the Wassermann test, died in Berlin recently.

Thirteen million dollars is paid annually to the physicians of the United States for life insurance examinations. This ought to convince medical men that the insurance business is worth catering to and that the work of medical examiner for insurance is to be taken seriously.

A recent study of glazes and enamels of cooking utensils made under the auspices of the English government, demonstrates, according to an editorial in the Journal A. M. A., that the danger of poisoning from the materials used in the manufacture of this ware is practically negligible. The experiments were made by boiling, from thirty minutes to two hours, citric acid solutions, vegetable broths, apples and rhubarb. Traces of lead so small as to be inconsequental, were recovered.

Lehman and Gibson, (Journal A. M. A., April 25, 1925), have demonstrated that a 2% sodium chloride solution sets up a forward peristalsis. They have observed that reverse peristalsis, mostly nausea and vomiting, were improved following the administration of cold 2% sodium chloride solution. Therefore, it is suggested that this may prove a simple remedy for nausea and vomiting from many causes. Teaspoonful of table salt to a glass of cold water as an extemporaneous mixture is suggested.

One more of the missing links between man and the ape was brought to light in Bechuanaland, South Africa, recently. It has come to us with the very euphoneous name of Australopithecus Africanus and is said to represent a super-anthrapoid ape.

To produce one pound of adrenalin it is said to take 16,000 cattle, which sounds rather startling; but then a pound of adrenalin is a lot.

A well known Nebraska physician, having the humanitarian rather than the commercial spirit, says— "The doctors can't see that the fundamental purpose of Medicine is to help the people and not to support an unlimited number of doctors in luxury, or even give an unlimited number a living. It is very interesting to me to see the doctors fighting the inevitable advance of public medicine".

Medicine in Nebraska and the Ku Klux Klan are getting slightly mixed. It is reported that a doctor elected mayor in a Nebraska municipality this spring owes his election to the Klan and another physician has been indicted for sending obscene anti-klan matter through the mails.

Dieting for those who are well: Eat anything you want, but not as much as you would like.

While we are thinking and talking about high blood pressure, let us not forget that there is too much low blood pressure and that it also portends something.

Somebody has figured out that there are on an average 108 births every minute.

It is due to Dr. E. L. McCrea, Table Rock, to state that in the May number his name was given incorrectly in connection with his article on Pernicious Anemia and that the term splenotomy occurred in the article when splenectomy was intended.

By the time this number of the Nebraska State Medical Journal reaches the reader, your editor and his daughter, Miss Harriet C. Long, Madison, Wis., hope to have crossed the "briny deep" from Quebec to Liverpool on a ten weeks' tour of the British Isles and the western countries of continental Europe. If the reader marvels that a Nebraska country doctor can ever get enough money to take a European tour let him figure the price of three cigars a day for forty years! Dr. R. B. Adams, secretary and associate will be editor ad interim, will look after the July and August numbers — and the real editor will not be missed. The editor hopes to return about August first.

MEDICAL EDUCATION AND MEDICAL SERVICE

William Allen Pusey, Chicago (Journal A. M. A., Feb. 7, 1925), believes that a consideration of the facts now available compels the following conclusions: "Under our present policy of medical education we are not preparing to meet the common needs of medical service of ordinary people in the cities. The failure is very much greater in the country. There is impending in the country a serious shortage of physicians, which threatens a breakdown of rural medical service. The explanations we are offering for the rural shortage do not explain it. The chief and determining cause for it is the excessive cost of medical education. The way this factor acts is not obscure; it is in accordance with the simplest economic and social principles. The remedies we are offering are artificial and economically unsound, and consequently they offer no satisfactory solution for the difficulties. They make no provision for the continuance of the independent rural family doctor, and, if adopted, would in time eliminate him. No amount of sophistry can escape these conclusions, once the facts are forced on us. They cannot successfully be minimized; they cannot be ignored; they cannot be explained away. If our leadership in medical education is to be respected and permanently retained, we must recognize the situation frankly; we must meet the facts directly; and if the difficulties they present cannot be overcome, we must either justify our educational policy in spite of them or change our policy. No other responsible course is possible, and sound leadership can do no less."

OSTEOPATHY IN ENGLAND

In reply to a critic who complained that osteopaths had been described as "unqualified practitioners," the Medical Press and Circular pointed out that "for more than four hundred years the medical profession had been under the authority, first of the church, second of the Royal College of Physicians and later of the General Medical Council." Moreover, during this whole period the practice of medicine had been confined to those who had completed a course of study which, although varying from time to time, was always considered necessary for the protection of the public against inefficient pretenders. The monopolies granted to the church and later to the college were found to be mischievous and in turn were abrogated. Authority over the medical profession is now in the hands of the General Council, which requires that before any one is granted a license to practice medicine he must have studied a full curriculum of subjects, each and all of which are deemed necessary to make him competent to deal with what may mean the life or death of his patients and so that he can deal intelligently with any type of case that may present itself. The comment ends with the statement that "these regulations have been judged necessary for the protection of the public, whose welfare is the prime object of the medical profession. When it fails in proficiency or in its duty, it will be time to consider whether the public can be better served by others; but not until then."—Jour. A. M. A., March 21, 1925.

THE ACUTE PAINFUL BACK AMONG INDUSTRIAL EMPLOYEES ALLEGING COMPENSABLE INJURY

Trauma, Harold R. Conn, Akron, Ohio (Journal A. M. A., Oct. 7, 1922), asserts is blameless as an etiologic factor in a large percentage of cases of alleged traumatic back. Malingering is of uncommon occurrence, but often is implied to the surgeon by the patient's false conceptions of etiology and an overanxiety to establish the recognition of a real disability. Osseous abnormalities in the low back furnish a potential group, especially susceptible to violence but capable of developing disability unexcited by trauma. Sacroiliac relaxations are of infrequent occurrence. Sacrolumbar lesions are properly of two classes as regards the involvement of the articulation, extrinsic and intrinsic, the latter representing the grave traumatic lesions of most common occurrence.

LIMITATIONS OF INTRAGLANDULAR INJECTIONS FOR GOITER

The limitations and dangers of intraglandular injections for goiter must be stated. What good results are obtained by this therapy will be made known by its enthusiastic advocate. To lessen the likelihood of goiter patients being endangered or seriously harmed, attention must be directed to the shortcomings of such treatment.

There is no way of knowing, when intraglandular injections are used, the amount of glandular tissue destroyed. Uncontrolled thyroid gland destruction is unsafe. In such a blind procedure toxic adenomata may be left, still active, in the gland. Fourteen references are given in the article: "Some Fallacies of the Intraglandular Injection Treatment of Goiter". Not a reference in support of the claims for phenol injections is given. The value of intraglandular injections of 5% phenol in the treatment of goiter is not demonstrated by citing isolated instances of favorable results, such evidence is worthless; this is true in any disease which has an irregular course and is at times self-limiting. Because of apparent or occasional favorable results, all sorts of therapy has been acclaimed, thus the 239 certain cures of goiter.

—Clement L. Martin.

SUMMARY OF ACTIVITIES, UNIVERSITY HOSPITAL FOR 1924

HOSPITAL PATIENTS	2872
Gain over 1923	124
BIRTHS	283
Gain over 1923	23
SURGICAL OPERATING ROOM PROCEDURES	1786
Gain over 1923	106
AUTOPSIES	84
(72.3% of total deaths)	
Gain over 1923	2.3%
AUTOPSIES—Out-Patient	4
Private Cases	5
TOTAL AUTOPSIES	93
OUT-PATIENT SERVICE—Total Visits	25,100
Gain over 1923	2709

There is a total of unrepeated patients' names (Hospital and Out-patient Department) of 8,129.

This shows a rather intensive use of a hospital of one hundred and thirty beds.

WOMEN'S AUXILIARY, NEBRASKA STATE MEDICAL ASSOCIATION

The doctor's wives having been organized by the above name at the recent meeting of the Nebraska State Medical Association at Lincoln, by the election of Mrs. F. A. Long, Madison, as president, and Mrs. Clarence Rubendall, Omaha, as secretary-treasurer; all doctor's wives in the state are urgently invited to join this body and those desiring to do so will please send one dollar to the undersigned.

Mrs. Clarence Rubendall,
116 S. 50th St., Omaha, Nebr.

"RIGHTS OF THE CHILD" AS DEFINED BY THE LEAGUE OF NATIONS

"By the present Declaration of the Rights of the Child, commonly known as the Declaration of Geneva, men and women of all nations, recognizing that mankind owes to the child the best that it has to give, declare and accept it as their nationality or creed:

"I. The child must be given the means requisite for its normal development, both materially and spiritually;

"II. The child that is hungry must be fed; the child that is sick must be helped; the child that is backward must be helped; the delinquent child must be reclaimed; and the orphan and the waif must be sheltered and succoured;

"III. The child must be the first to receive relief in times of distress;

"IV. The child must be put in a position to earn a livelihood and must be protected against every form of exploitation;

"V. The child must be brought up in the consciousness that its talents must be devoted to the services of its fellow men".

THE OATH OF HIPPOCRATES

We have been requested to publish the oath of Hippocrates:

"I swear by Apollo, the Physician, and Aesulapius, and Hygiea and Panacea, and all the gods and all the goddesses — and I make them my judges — that this mine oath and this my written engagement I will fulfill so far as power and discernment shall be mine.

"Him who taught me this art I will esteem even as I do my parents; he shall partake of my livelihood, and, if in want, shall share my goods. I will regard his issue as my brothers and will teach this art without fee or written engagement if they shall wish to learn it.

"I will give instruction by precept, by discourse, and in all other ways, to my own sons, to those of him who taught me, to disciples bound by written engagement and sworn according to medical law, and to no other person.

"So far as power and discernment shall be mine, I will carry out regimen for the benefit of the sick, and will keep them from harm and wrong. To none will I give a deadly drug, even if solicited, nor offer counsel to such an end; likewise to no woman will I give a destructive suppository; but guiltless and hallowed will I keep my life and mine art. I will cut no one whatever for the stone, but will give way to those who work at this practice.

"Into whatsoever houses I shall enter I will go for the benefit of the sick, holding aloof from all voluntary wrong and corruption, including venereal acts upon the bodies of females and males, whether free or slaves. Whatsoever in my practice or not in my practice I shall see or hear, amid the lives of men, which ought not to be noised abroad—as to this I will keep silence, holding such things unfitting to be spoken.

"And now if I shall fulfill this oath and break it not, may the fruits of life and art be mine, may I be honored of all men for all time; the opposite, if I shall transgress and be forsworn."

Note—Hippocrates was born in 460 B. C., on the island of Cos, near the coast of Asia Minor. He was a member of the family of Asclepiadae, and was believed to be either the ninteenth or seventeenth in direct descent from Aesculapius. He studied medicine under Heraclides, his father, and Herodicus of Selymbia. He travelled extensively and taught and practiced his profession at Athens and other cities of Greece. He died at Larissa in Thessaly probably in 377 B. C.

NEBRASKA VITAL STATISTICS FOR 1924

The Division of Vital Statistics, State Bureau of Health has kindly furnished a report to the Journal from which the following is taken:

Births	30041
Deaths	12389
Deaths, Infants under one year	1669

Deaths and Causes of Death:

Typhoid Fever	29
Measles	95
Scarlet Fever	36
Whooping Cough	28
Diphtheria	106
Influenza with complications	145
Erysipelas	21
Acute Poliomyelitis	9
Lethargic Encephalitis	7
Tetanus	17
Tuberculosis (all forms)	443
Syphilis	45
Septicemia	118
Acute Rheumatic Fever	14
Diabetes Mellitus	230
Pernicious Anemia	122
Exophthalmic Goiter	21
Cerebral hemorrhage, thrombosis and embolism	1089
Epilepsy	68
Infantile convulsions (under 5 years)	20
Endocarditis and myocarditis (acute)	219
Angina Pectoris	156
Other Diseases of the Heart	1196
Arterio Sclerosis	320
Bronchopneumonia	534
Asthma	43
Abortion	21
Ectopic Gestation	8
Puerperal Hemorrhage	21
Cesarean Section	5
Puerperal Septicemia	47
Puerperal Albuminuria and Convulsions	43
Gangrene	47
Ulcer of the Stomach	45
Ulcer of the Duodenum	12
Appendicitis	233
Intestinal Obstruction	139
Chronic Nephritis	695
Suicide by Firearms	69
Food Poisoning	12
Burns	54
Accidental Drowning	54
Traumatism by Fall	133
Auto Accidents	117

ALPHA OMEGA ALPHA HONORS

The Nebraska Alpha Chapter of Alpha Omega Alpha announces the following elections to membership from the Class of 1925, University of Nebraska College of Medicine, Omaha, Nebraska:

Furnish, Richard D., Kansas City, Mo.
Morton, Herschel B., Seward, Nebraska
Allen, Edgar V., Cozad, Nebraska
Powell, Lyle S., Douglas, Wyo.
Shaw, Wm. J., Omaha, Nebraska
Peterson, E. C., Dannebrog, Nebraska
Kroehler, Robt. A., Plattsmouth, Nebraska
Brehm, Paul A., Lincoln, Nebraska
Grau, Eugene C., Omaha, Nebraska
Petersen, M. C., Blair, Nebraska
Pelikan, Edward R., David City, Nebraska.

Alpha Omega Alpha is an honorary fraternity, chapters of which have been established in the twenty-six leading medical schools of the United States. The chapter at the University of Nebraska was established in 1914. Election to membership is based upon the scholarship record throughout the four years of the medical course.

THE SOCIETIES

Lancaster County Medical Society

Regular meeting held April 14, at the Orthopedic Hospital, Dr. David C. Hilton, presiding.

The first paper of the evening was read by Dr. W. O. Colburn, entitled "Artificial Feeding of Infancy".

Being a physician, called upon daily to administer advice regarding the feeding of infants, decide to master a few rules, and some knowledge of foods to be used in infant feeding. Learn how to determine the number of calories a given infant should take, not to be feeding with such absolute accuracy, but that you may have some tangible idea what your baby should require. Confine yourself to modified cow's milk mixtures until by experience and study you may acquire the use of other foods. Remember that 1½ to 2 ounces of cow's milk per pound of body weight is a safe rule; 1 to 1½ ounces of sugar is a conservative estimate, using the smaller amount with the maximum of milk, and the larger amount of sugar with the smaller portion of milk.

Know your carbohydrates: (a) The slightly laxative class; (b) the moderately laxative class; (c) the very laxative sugars.

Use these sugars for your laxatives instead of resorting to caster oil, milk of magnesia, enemas or suppositories. Be able to pick up a diaper and diagnose a sugar intolerance or a protein or putrefactive indigestion. Be able to correct these conditions by food changes. The withdrawal of sugars for the fermentative type, the exclusive sugar diet for a few hours for the putrefactive type. Forget the cathartics, the bismuth mixtures and pepsin, that have been so easy for you to use.

Regularity of feeding hours, and little handling of the infant after feeding, together with accurate weights, bi-weekly, are necessary adjuncts for the welfare of the artificially fed infant.

Dr. Inez Philbrick opened the discussion with an attack on the legitimacy of Pediatrics as a specialty.

The second paper of the evening was by Dr. B. F. Williams entitled "Fundamentals in the Care of Psychiatric Cases". Classification reveals a wide variation of opinion as to cause and nature of mental disorder. This situation brings confusion to the student of psychiatry and in medico-legal controversies enables the crafty lawyer and the unscrupulous medical expert to thwart justice through the agency of hypothetical question, presenting evidence, alleging facts, many of which are contradictory yet given equal value in the interest of the one seeking to escape the penalty of the law. The observation that this combination rarely succeeds reflects little credit upon the medical profession but does credit to the average jury whose constant endeavor is to be fair in judgment. A committee appointed by the American Psychiatric Association has constructed a classification in which the psychoses are subdivided with due regard to physical states which attend mental disorders.

Such legal conceptions as "temporary insanity" and "irresistable impulse" are omitted and paranoid states are treated as subdivisions in such a manner that the average juror can grasp the situation when presented by one having a fair ability to define the legal application of paranoid state. Thus, the classification lends itself to a more accurate description of mental disorder and limits the activity of those who wish to secure immunity by employing unfair means. The question of adequate hospitalization of early mental disorder is deserving of careful consideration; as has long been known the mental patients chance for recovery is in direct ratio to the promptness with which the disorder is recognized and segregation provided. Our present viewpoint of mental disorder suggests so strongly disturbance of physical structure that the first step in the study of any case is a careful investigation of the various body systems. This service can be best supplied in a general hospital where the staff organization is upon such a plane that early mental patients may be studied by a sympathetic staff working in harmony.

Negative findings are quite as valuable as positive findings and no diagnosis can be made in mental disorder until the various body systems have been acquitted of complicity. Committment to a state hospital for the insane carries with it a stigma which all persons seek to avoid. However, we must admit, committment to a state institution means retirement from business activity and outcast from social life. It is conceded this viewpoint is the fruit of faulty teaching. However, it is firmly established and will not be materially altered during the present generation. It is, therefore, incumbent upon general hospitals to provide facilities for the care of early mental cases and to correlate the work of the entire staff, first, in an effort to diagnose and, second, to scientifically treat mental disorders. Our experience in war time hospitalization of troops establishes beyond dispute our responsibility to psychiatric service. There is nothing in our experience to suggest that war time ratio of the incident of mental disease is far different to the incident of mental disorder in civil life. In recognition of this fact, modern hospital organizations include psychiatric service.

—Arbor D. Munger, Sec.

The **Madison County Medical Society** (embracing the profession of Stanton, Pierce and Antelope counties as well), met over a dinner at the Pacific Hotel, Norfolk, April 21st. Dr. H. G. Morris, Newman Grove and Dr. A. M. Sonneland, Norfolk, read papers on Goiter. Dr. S. A. Campbell, Norfolk, gave a very scholarly discussion of the present day methods of handling goitrous patients under all conditions.

At a meeting, May 5th, Dr. Frank Conlin, Omaha, gave a lecture on "The Prognosis and Treatment of Glycosuria".

Before the **Saline County Medical Society** at DeWitt, April 14th, Dr. J. C. Waddell and Dr. J. C. Rush, Beatrice, gave papers on "Peptic Ulcer". Fifteen members attended the meeting.

The **Thayer County Medical Society** met in quarterly session at Hebron, April 7th. Following a dinner the session was held at the Blue Valley Hospital. A symposium on Obstetrics was given by Dr. F. A. McGrew, Deshler, "The Minimum Care Due the Obstetric Patient"; Dr. H. W. Saylor, Bruning, "The Toxemias of Pregnancy"; Dr. E. A. Bowles, Hebron, "Eclampsia".

—R. F. Decker, Sec.

HUMAN INTEREST TALES

Dr. John. B. Bannister, Omaha, is reported ill.

Dr. A. E. Stuart has become chairman of the town board of Cedar Bluff.

Dr. A. Cauley, Humphrey, was elected chairman of the town board last month.

Dr. E. L. McCrea, Table Rock, became chairman of the village board this spring.

Dr. R. A. Evans, for several years in practice at Ponca, has located at Algona, Iowa.

Dr. D. D. Raber, Tilden, has gone to Chicago and Philadelphia to do postgraduate work.

Dr. L. D. McGuire, Omaha, and Miss Margaret Rau, Austin, Minn., were married April 16th.

The OALR men had a banquet and program at the Lincoln Coutry Club on the evening of May 11th.

The Catholics are planning a hospital for Chadron, the first unit of which is to be built this summer.

The marriage April 23 of Dr. Elmer R. Porter and Miss Nellie Holingsbaugh, Omaha, is announced.

Dr. H. W. Parchen, Philips, submitted to an operation at the Norfolk General Hospital, the last of April.

As a part of the practical work of Creighton medical college, Junior Medics make a sanitary survey of Omaha.

Dr. E. R. Hays, Falls City, gave a lecture before the students of Creighton University, College of Medicine, May 4th.

Dr. J. B. Ralph, Omaha, was elected medical director of the G. A. R. for Nebraska at the recent annual encampment.

Dr. Clyde Moore and family, and Dr. Donald Owen and family, Omaha, in two cars, motored to Santa Barbara, Calif., in May.

Dr. F. X. Rudloff, Battle Creek, has suffered from subacute arthritis for some time and spent several weeks at Excelsior Springs, Mo.

Dr. H. S. Andrews, Minden, is scheduled to accompany Peck's inter-state post graduate clinical tour to Canada and the British Isles.

Dr. Lucien Stark and family, Hartington, returned from Florida in time for the annual meeting of the Nebraska State Medical Association.

Dr. H. von W. Schulte, dean of Creighton College of Medicine, gave the address at the annual convention of Catholic Alumnae, Omaha, May 2nd.

Major General A. A. Fries, head of the chemical warfare service of the army, addressed the students of Creighton Medical on "Chemical Warfare", April 21st.

Before the Dundee Parent-Teacher's association, May 5th, Dr. G. W. Dishong, Omaha, gave an address on "The Psychology of Misbehavior and Crime".

Dr. J. C. Hay, Laurel, well known and well liked general practitioner at Laurel for a score of years is taking an enforced vacation because of failing health. He is at the Woodmen Sanitarium, Colorado Springs.

Dr. W. L. Crosby, Beemer, has disposed of his office and infirmary to Dr. C. A. Pierson, recently from Chicago. Dr. Crosby, it is stated, will retire from practice.

Dr. Sergius Morgulis, of the University of Nebraska College of Medicine, gave the principal address at the Nu-Med dinner at the Grand Hotel, Lincoln, April 16th.

Three police surgeons in Omaha were summarily dismissed and the following were appointed to replace them: Drs. Frank Lovely, J. J. O'Hearn, C. T. Martin and J. G. Vetters.

Press reports indicate that the following Omaha medical men will accompany Peck's interstate post graduate clinical tour to Canada and the British Isles: Drs. Leroy Crummer, J. A. Henske, J. H. Vance, H. A. Wigton.

The Good Samaritan Hospital, Kearney, entertained the Buffalo county medical society at an elaborate dinner in honor of the twenty-fifth anniversary of the service of Sister Hubertina, April 27th.

Dr. A. G. Edwards, dean of the colored medical profession of Omaha, gave a health talk at the north side Y. W. C. A., in which he stressed the need of the race making greater efforts to overcome the handicap of greater morbidity and mortality compared with the whites.

Nebraska Section American College of Surgeons, held the annual business meeting, Lincoln Hotel, Lincoln, May 11th. Dr. J. S. Welch, Lincoln, succeeded to the presidency and Dr. J. P. Lord, Omaha, was made vice president. Dr. W. L. Shearer, Omaha, was reelected secretary-treasurer.

NECROLOGY

John Mayer, Osmond, Nebr.; Ensworth Medical College, St. Joseph, Mo., 1895; a practitioner at Osmond since 1901, died of a paralytic stroke, April 20th, aged 60 years.

P. B. Allen, York, Nebr.; said to have been one of the pioneer physicians of York, died April 27th, at the age of 91 years.

T. J. Chidester, Western, Nebr.; Cincinnati College of Medicine and Surgery, 1873; long time resident and practitioner of Saline county, died April 19th, aged 80 years.

Frederick H. Milliner, formerly of Omaha; Jefferson Medical College, 1894; noted electrician, inventor of wireless telephony from a moving train; died at the home of a brother at Alpine, Calif., recently, aged about 52 years.

WHY?

"Why does a lawyer get $10 — without moving from his seat—for making out a lease that any trained stenographer can fill out in ten minutes, while a physician gets only $1 to $3 for diagnosing and prescribing for a patient's ills, the correction of which will keep him fit to earn thousands?

"Why does a mechanical engineer get $50 to $250 for looking over a plant and telling a manufacturer where to place machinery so as to get out of it maximum efficiency, and a physician get 1-25 to 1-125th that sum for looking over a man and telling him how to get the maximum efficiency out of himself?

"Why are attorneys able to collect their fees usually in advance and doctors two months to a year after service is rendered, if they ever get them at all?

"Why do doctors give away $100,000,000 worth of free service a year in hospitals, clinics, home and office treatment, while other men give away nothing?

"Why are butchers, bakers, grocers and milkmen without education, many hardly able to read or write, able to earn more money than thousands of physicians with education?

"Why do legislatures concede to lawyers practically every request they make for laws increasing the emoluments and safeguarding the interest of their profession and refuse practically all requests for increasing the emoluments and protecting the interest of physicians engaged in public health work and otherwise?

"Why do doctors have to work 14 to 18 hours a day, seven days a week, to earn the monetary rewards of mechanics and other lay workers, working only 8 hours a day, five days a week and half a day Saturday, with all holidays off?

"Why is it that a doctor making an honest mistake in the treatment of a patient is sued for malpractice and often mulcted in heavy damages, while a lawyer making the same honest mistake in the trial and handling of a client's case is never sued and never obliged to pay a cent of damages?

"Why is it that we have to pay larger premiums for indemnity insurance than rum sellers, manufacturers employing workers at hazardous tasks, and almost every other type of risk?

"Isn't it time we woke up and got on our toes—time we became more aggressive for our rights?"

"BECAUSE WE ARE CONSIDERED THE SOFTEST AND EASIEST CLASS ON EARTH ON WHICH TO IMPOSE AND THE VALUE OF THE SERVICE WE RENDER THE WORLD THE LEAST APPRECIATED.

"ISN'T IT TIME WE WOKE UP AND GOT ON OUR TOES — TIME WE BECAME MORE AGGRESSIVE FOR OUR RIGHTS?"

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, July, 1925 No. 7

CONTENTS

Page
Medicine of Yesterday, Jno. B. Potts, M. D. 237
Modern Aspects of Nutrition. 5. Faulty Food with Reference to Derangement in the Process of Metabolism Through Impairment of the Endocrine System—Continued, Victor E. Levine, M. A., Ph. D. 248
Some Studies in Glaucoma, Earl B. Brooks, M. D., F. A. C. S. 254
Fifty-Seventh Annual Convention of the Nebraska State Medical Association, Lincoln, May 12-14, 1925, Invocation 260
In Memoriam 271

EDITORIALS—

Medical Education 272
The Doctor's Fee 272
Annual Dues for 1925 273
Report of the Oto-Larynological Meetings at Atlantic City 274
The A. M. A. Meeting at Atlantic City, N. J.—Section on Diseases of Children 275
Evaluation of Doctors Relative to Public Health Work 276
Unwarranted 277
Editorial Paragraphs 277
Dr. Hamilton B. Lowry 278
Michigan State Medical Meeting 279
The Creighton University College of Medicine Intern Appointments, June, 1925 279
University of Nebraska College of Medicine Intern Appointments—Class of June 6, 1925 279
The Societies 280
Human Interest Tales 280

MEDICINE OF YESTERDAY*

Jno. B. Potts, M. D.

Instructor of Rhinology and Laryngology, University of Nebraska College of Medicine
Omaha, Nebr.

It seems fitting at our annual meeting that we should look into our history and render homage to some of the great men of the past who for several thousand years have been laying the foundation and building the structure of our temple of medicine. Our lives are so occupied with the business of each day that it is hard to find time to think of the arduous labors of the generations of the past, and after a wonderful discovery is made it soon becomes matter of fact and it is hard for us to realize that we have not always enjoyed its blessings. In fact, a fickle public, forgetting the awful sufferings of the past is prone to turn against our science, especially in prophylactic medicine. The terrible ravages of smallpox, the plague and diphtheria are forgotten, and the public are deluded into following ignorant cults or so-called cults of medicine; osteopaths, chiropractors, pseudo-religious quackery, Christian Science maudlin sentimentalists, and the anti-vivisectionist. Propaganda is published in a press subsidized by the money gained from quack advertisements. Politicians under their influence gain entrance into our legislative bodies and laws are enacted, giving these ignorant sects large liberties with the life of patients and the public. Other laws are continually introduced to abolish or hamper the protection of the public from disease and hamper our public health officers, because through ignorance or obstinence they refuse to recognize broad principles established by science as to the cause and prevention of disease. Laws, which if passed and enforced, would plunge the world back into the dark ages of ignorance and re-introduce the unrestricted ravages of the scourges of disease which formerly used to periodically decimate the population and which with our modern modes of travel would be immensely increased. As an instance of this, I cite you to the bill introduced into our legislature two years ago, and passed by the committee on medical legislation to first reading before it could be stopped, which provided for the abolishing of any form of vaccination or the use of serums.

---

*Address on Surgery delivered before The Nebraska State Medical Association at Lincoln, May 13, 1925.

Internally we suffer from the frailties of the human race and some of us fail to keep the pure lamp of medical science burning and turn aside to follow a jack-o-lantern, Abrams, system, etc. Then we have the pile doctors, cancer paste specialists, and all sorts of advertising doctors who depend upon their advertisements rather than upon the service rendered to secure their patients. Men who would rob the science of its high ideals and reduce us to commercialism for the dollar. Fee-splitters, who while apparently wearing the white robe of science prostitute not only the high ideals of themselves, but also those of the doctors who refer them business and often the institution in which they labor. This fight against the true and high ideals of medicine is not new, but is as old as the science.

In the earliest records we find the art of healing consisting of the use of certain herbs and concoctions combined with religious rites, superstitions and incantations. Hand in hand with the recognition of fever and infections is the superstition of the "evil eye" and the superstition of disease being due to some being, influence or act of wrong doing. As each civilization or center of learning advanced, we find medicine advancing with it until such time as the religion developed a priesthood, which almost invariably gained control of the schools and hence of medicine, and then the true art and science of medicine decayed and religious superstition and incantations were substituted for normal medical treatment.

The earliest form of medicine was probably the care of injuries, stopping of hemorrhage, removal of foreign bodies and the care of women at child-birth. Following this was the knowledge of certain remedies from herbs, physic and cooling draughts for fever. But only the simple diseases were recognized as such and anything not understood, was considered as caused by the evil one.

"As primitive man established the origin of sickness on a demonistic hypothesis, his therapeutics were, therefore, aetiological — magic had to be met by magic.

"Primitive man looked upon illness and recovery as a contest between two opponents wielding sorcery — a contest in which the weapons were derived from the armory of the supernatural, the mystical and the magical. This is an attempt to break natural laws rather than to assist their course by knowledge; to bring influence to bear on nature through unnatural means.

It was only to individual members of the tribe that the power was vouchsafed, through secret knowledge and mystical art (particularly in the use of poison), of being in touch with the spirit world, of counteracting enchantments, fending off demons and communicating the means whereby an enraged deity might be pacified."

"In spite of demonism and witch-doctors, pure empiricism was never entirely extinguished, even if confined to the narrow limits of a few surgical accomplishments.

"Neither could mysticism extinguish the realization on the part of primitive man that life was dependent on breathing and the warming blood — death served as a constant reminder of this fundamental truth.

"The future, however, lay with the priests. Wherever a state arose or a priestly caste became organized, and wherever, under favorable conditions, a civilization was gradually evolved, there sprang from the isolated, widely scattered germs of primitive medicine those wonderfully eclectic systems, partly theurgical, partly empirical, which are found in the history of all ancient civilizations, and which represent the starting-point of all higher medical development."(1)

Mesopotamia is the nursery, if not actually the cradle, of all culture.

"According to the results of recent research, the seed of civilization was sown about 3000 or 4000 B. C. by the Sumerians. This people it was who made a previously inhospitable land habitable and fruitful by building canals; who laid the foundations of the ancient oriental cosmogony, religion and statecraft; who invented pictorial writing, of which the cuneiform was a development; who fostered the study of astronomy and natural science, the arts and crafts.

"The Babylonians and Assyrians, the Semitic conquerors of Mesopotamia, borrowed from the Sumerians the elements of morals, learning and the arts. They in their turn developed these further, setting on them the impress of their own individuality and of their changing fortunes and bringing them to a high pitch of perfection, till the sceptre of power and the torch of ancient civilization was wrested from them by the Indo-Germans.

"Babylon, the splendid ornament of Chaldea, and Ninevah, the 'divinely great city', represent less the commencement of intellectual development than the most historically important phase of the same. Babylon and Assyria have given a name to a civilization which existed before their political supremacy, and which was not entirely extinguished with its fall.

"Races and nationalities most widely sundered in the intellectual sense gradually became "Babylonian" under Mesopotamian influence and bearers of Babylonian culture far beyond its temporal or geographical boundaries.

"The highest achievement of Babylonian civilization, the sublimest, the esoteric fruit of the intellect of a learned and select priesthood, consists in a scheme of the universe, rounded and complete, the result of the labours of many generations, from which all details of political, social and scientific life were deduced, with a semblance of mathematical proof.

"The axiom, in which the whole system rooted, consisted in the view that all things represent the emanation of divine power, that all events are divinely preordained and are accomplished in accordance with the immutable law of a pre-established harmony.

"Divine will, divine activity are omnipresent; the same forces and laws govern things great and things small; all series of manifold phenomena correspond to one another like reflections in a mirror. The most important manifestation, however, is in the course of the celestial bodies, apparently erratic, really guided by strictest law. The firmament, therefore, is the great book in which is written the law of the whole universe; everything on earth has its counterpart in the heavens. Astronomy, the science of sciences, affords the clearest insight into the laws and the inter-relationships of earthly events and astrology, its practical application to life, gives the clue to comprehension of the present and prediction of the entire future".(2)

Astronomy then became the established means of prognostication not only in disease, but of the life of nations and individuals, journeys, events, investments, marriages, births, etc. Sacrifice and the reading of the livers of the sacrificed animals were added to this. Along with this they gained a considerable knowledge of anatomy from the study of sacrificed animals. The organs were recognized, although their functions were but little understood. Dark and light red blood were described, but the function and process of the circulation was unknown. Surgery received some attention as shown by the following laws, but little detailed history so far has come down to us.

The laws of Hammurabi are:

"If a physician cause a severe operation wound with a bronze operating knife and cure the patient, or if he open a tumor (cavity) with a bronze operating knife and save his eye, he shall have ten shekels of silver.

"If it be a freed man, he shall have five shekels.

"If it be anyone's slave, his onwer shall give the physician two shekels of silver.

"If the physician make a severe wound with a bronze operating knife and the patient die, or if he open a growth with a bronze operating knife and the patient lose his eye, he shall have his hands cut off.

"If a physician make a severe wound on the person of the slave belonging to a freed man with the bronze operating knife and kill him, he shall replace the slave by another slave.

"If a physician heal a broken bone or cure diseased bowels, the patient shall pay the physician five shekels of silver".

Brilliant as was their wonderful civilization, remarkable as was their knowledge of astronomy, mathematics, agriculture and government, scientific medicine could make but little progress saddled to the priesthood and circumscribed by astrology omens and temple sleep.

"The kingdom of the Pharaohs has left deeper traces upon the memory of mankind than that of Babylon. Throughout all time remembrance of the culture of the land of the Nile remains vivid on account of its intimate and constant association with the civilization of the Mediterranean nations.

"For thousands of years the majestic Pyramids have kept fresh in the minds of countless races the golden age of the land of their birth; the Bible and Homer, Hellenic philosophers and historians spread afar the renown of Egyptian science and art long after the hieroglyphics had become an insoluble riddle. In the dark ages and in lands where the twilight of superstitious belief glimmered faintly, the Egyptian priesthood was celebrated as the source of profoundest mysticism and of the most occult arts. The wisdom of the ancients, like a veiled image, more wondered at than understood, wrought with its magical influence upon mind and imagination, since no one could loosen the tongue of the silent Sphinx. A corner of the veil hiding Egyptian civilization from intrusive curiosity was first raised when the trilingual inscription, the Rosetta Stone, provided the key to the forgotten writing and speech of the Pharaohs. The sagacity of savants was then able to bring to light the intellectual treasures of the vanished centuries from temples and tombs, from inscriptions and papyrus manuscripts.

"Thanks to the labours of the past century, thanks to the desert sand and the almost rainless climate of Egypt, which greatly assist to preserve the hoary remains of a past civilization, we are far better able to review its development than in the case of less remote Greece and Rome, at least in its more salient characteristics, and we obtain an insight into the political history and statesmanship of the Egyptians, their mode of life, religious views, their artistic, industrial and technical achievements and the content of their science.

"Herodotus declares Egypt to be the healthiest of countries, but filled with physicians of whom "one treats only the diseases of the eye, another those of the head, the teeth, the abdomen or the internal organs. Diodorus says that the Egyptian physicians looked upon excessive consumption of food as the main cause of disease, cured chiefly through fasting, emetics and purgatives and were under obligation to treat soldiers and travellers without fee. The same author remarks that the unsuccessful of issue of a course of treatment, conducted upon recognized and prescribed lines, was not to be laid to the blame of the physicians, whereas independent procedure, going outside the bounds of tradition carried the death penalty with it, in case of a fatal result.

"We know now that the Greeks, when the land of the Nile was opened to them in the seventh century B. C., encountered the decline, not the zenith, of Egyptian medicine. If the originality of the literary output be accepted as a criterion, the era of its highest development is to be referred to a period about 2000 years B. C. It has been definitely proved that the two papyrus rolls which come chiefly into consideration as bearing upon Egyptian medical knowledge — the Ebers and Brugsch papyri — were written about the middle of the sixteenth and fourteenth centuries B. C. respectively. Both these works, however, are only compilations of older writings that in part date back to the times of the Pyramids — about 3000 B. C.

"The physician belonged to the priesthood, to that caste viz., to which in addition to the religious worship, the care of all learning was entrusted. Medicine, together with the other branches of knowledge, was taught in the schools existing in connection with the temples — the most celebrated being in On, Sais, Memphis and Thebes. The medical adepts undoubtedly received practical as well as theoretical teaching (a fact inferred from the holy books and their commentaries, inspired by the god Thoth); opportunity for this was afforded by the number of patients who sought care in the temples, whilst the physician-priests also visited the sick in their own house. The identification of the physician with the priest brought advantages and disadvantages: On one side regular education was ensued against which the unskilled could not prevail and the physicians, as members of the priestly college, were in receipt of salaries from the temple funds. On the other side, science was blended with theury and lay under the ban of a divinely inspired, unprogressive tradition, which set the narrowest limits to individual enterprise. Thus, whilst we hear much of celebrated schools of medicine, we hear but little of any outstanding individualities and though the schools may have diverged from one another in particular views, medical sectarianism was not possible.

"The differentiation of the priest-physicians into physicians in the strict sense of the term, surgeons and exorcisers, is proved to have been of early origin (exorciser had the highest position); the introduction of specialism, however, (as reported by Herodotus), was probably peculiar to the period of decline of Egyptian medicine. The individual priestly schools appear, according to the Ebers papyrus, to have cultivated certain special branches. The priestly colleges, as corporations, came to assume the position of authority in medical matters and supervised medical activity (the head priest of Sais bore the title "First of the Physicians"). Obstetrics (and cosmetics) were in the hands of expert women, foremost among whom were the midwives.

"Priestly science brought to bear upon the methods of healing and drugs no mean knowledge of natural phenomena (zoology, botany, chemistry); botanical gardens were in existence; chemistry, the name of which science is to be traced back to XNUI, the indigenous name of Egypt, had attained a considerable degree of development, knowledge of the structure and functions of the human body remained nevertheless at a very low level. The available sources of information, consisting, as they do, only of practical medical works and books of prescriptions, furnish no grounds for conclusive judgment. They prove distinctly, however, that to attribute to the Egyptians, on the ground of their methods of embalming, any considerable knowledge of anatomy, as has been previously done, was quite unjustifiable. What they did know was vastly less than they might have learned from such procedures. In this connection it must not be forgotten that the evisceration preliminary to embalming was undertaken, not by physicians, but by workmen, and that the ritual observances surrounding the custom made the satisfaction of scientific curiosity almost impossible. The primitive conceptions of anatomy possessed by the Egyptian priest were derived from accidental experience and observations, during slaughter of animals — observations which, as with other peoples, were woven into a network of preconceived speculations upon natural philosophy.

"The respiratory movements placed the entrance to and exit of air from the body beyond doubt, and the paths by which the pneumatic circulation was supposed to take place seem to have been fixed with a deceptive exactness in very remote times through observations upon animal and human bodies. A part of the vascular system was seen always to contain blood whilst another — the arteries — was almost empty (i. e. held air). This was considered irrefragable proof that the latter were pneumatic canals, a false conclusion being drawn as to the condition in the living from that in the dead. The heart was recognized as the source of the blood vessels.

"The papyri of Ebers and Brugsch contain in the book "Expulsion of the Uchedu", which describes the air-vessels, the oldest source of the pneumatic theory. It is remarkable that there is here a distinction between good and bad air — air of life and air of death — which are supposed to circulate differently, hardly to be explained otherwise than by in — and expired air (this distinction corresponds to the separation of day-blood from night-blood in the haematic life-theory of the Babylonians). Heart and stomach (designated by the same hieroglyph, the cooking-pot) were supposed to constitute a double system in which the blood was prepared from the ingested food. The heart was supposed to get smaller with age.

"In the matter of diagnosis it may be taken as proved that the Egyptian physician not only practiced inspection and palpation, but examined the urine.

"Emetics, purgatives and enemata were employed in order to remove the 'materia peccans" in accordance with the fundamental principles considered to govern the incidence of disease. The same end was served by blood-letting, diaphoretics, diuretics and sternutatories; the unwholesome air was got rid of by the excitation of ructus and flatus (onions, leeks, beans). The pharmacopeia— derived from the vegetable, animal and mineral kingdoms — was unusually well stored. In particular may be mentioned the use of copper salts and oxymel of squills as emetics, of castor-oil (with beer) as a purgative, of pomegranate as a vermifuge, of opium and helmlock.

"Medicinal therapeutics were subject to strict rules, and it is more especially in this domain that the oppressive restraint limiting individual action made itself most felt. Acute affections could never be treated for a longer period than five days, and the medication consisted in administering a drastic upon the first day (as an introductory treatment towards eventual expulsion of the poison); on the following four days other medicines were administered (as an after-cure); hence are to be found the subscriptions 'for one day' or 'for four days'."(3)

The following examples from the Ebers papyrus are illustrative of the methods of examination and treatment: "When thou findest a purulent swelling with the apex elevated, sharply defined and of a rounded form, then sayest thou, 'It is a purulent tumor which is growing in the flesh . . .I must treat the disease with the knife'.

"When thou findest a growth upon the throat of a patient — containing matter — and thou findest its top raised like a wart, know that the matter moves within it.

"When thou findest a fatty growth in the neck, and findest it like an abscess of the flesh and soft to the fingers, then sayest thou, 'He has a fatty growth on his neck. I will treat the disease with the knife, paying heed to the vessels.'

"When thou findest a tumor of the flesh in a particular part of a person's body, and findest it like skin upon his flesh, it being moist, moving with the fingers except they be still, the movement being thus due to the fingers, it is a tumor of the flesh; then sayest thou, 'I shall treat the disease by trying to cure it with fire'."

The statement on the part of the ancients that the Egyptians practiced circumcision from the earliest times finds support from the discoveries in mummies and pictorial representations (a picture of the time of Rameses II, shows the operation being performed upon a boy). The priests and nobility always subjected themselves to circumcision.

Female circumcision seems to have been a widespread custom in Egypt in very early times.

As an example of the method in which pregnancy or the course of delivery was foretold, the following may be quoted from the Brugsch papyrus: "Another direction to see if a woman bears or not, a watermelon pounded is mixed with the milk of a woman who has borne a son, and is given to the patient to drink: If she vomit, she is pregnant; if she has only flatulence, she will never bear again".

The attainments of the ancient Egyptians in Hygiene and prophylaxis against disease ranked higher than their therapeutics.

Again we find the priesthood in control of education and medicine. Dissection of the human body was strictly prohibited and altho empiric medicine gained much, the scientific basis of disease and the treatment made but little progress.

Persia.

We will pass over quickly medicine in Persia, China and Japan, for while they had their medicinal system it was so interwoven with mysticism and religious rites that comparatively little advance was made in scientific medicine.

The Bible is full of medicine and the laws of Moses, containing excellent sanitary and health regulations. Probably largely acquired from Egypt.

In India our first knowledge of their medicine begins about 1500 B. C. At that time some empirical medicine was practiced and they had some knowledge of anatomy and disease but there was a widespread belief that sickness was the result of some wrong doing or due to some malign influence and hence the treatment was largely directed toward appeasing the influence by prayer and magic spells. Later on, as their wonderful civilization progressed, and as knowledge increased, medicine shared in the advance and the knowledge of anatomy, disease, therapy and surgery, made great strides. The physicians were separated from the priests, textbooks were written, medical schools established and the degree of doctor granted personally by the king. The course of study lasted six years and consisted of both lectures and clinical instruction in medicine and surgery. Classes were limited to six students to a teacher. Benares on the Ganges was the chief center of medical science and learning. The time of this wonderful age in India about coincides with that in the western world of Greece, Rome and Egypt, 500 B. C. to 800 A. D. The most notable writings were left by Caraka, who apparently lived about the time of Christ. Susruta about the fifth century A. D., and Vagbhata about the 7th century A. D.

The following view was current upon the necessary traits of a scholar suited for the study of medicine and those of a fit teacher: "The scholar must have a quick tongue, small lips, regular teeth, a noble aspect, well-formed nose and ears, a lively spirit, and a graceful bearing; he must be capable of withstanding pain and fatigue. The teacher must read aloud from the holy book, step by step, verse by verse, distinctly, but without effort, without hesitation, neither too quickly nor too slowly, not speaking through the nose, showing no trace of impatience", etc. At the close of the initiation ceremony the novice was warned to be chaste and abstemious, to wear a beard, to speak the truth, to eat no meat, to render to his teacher obedience in all things; as a physician he was to treat gratuitously Brahmans, teachers, the poor, friends and neighbours, the pious, orphans, etc.

On certain days, in the dusk, during thunder and lightning, at the time of the king's illness, during great festivals, or convulsions of nature, no study was to be undertaken lest it receive only half attention. "Instruction is to be received with the understanding, not only with the ear, lest the student be like the ass who, bearing a burden of sandalwood, recognizes not its value, but only its weight."

The practice of surgical operations was carried out by showing the student incisions upon fruits, punctures in distended skins, bladders or bags, scarification upon stretched skins with the hair still on, venesection upon the blood-vessels of dead animals or on lotus-stalks, probing in worm-eaten wood or tubular objects, extraction of teeth from dead animals, opening of abscesses upon a lump of wax smeared on wood, sewing in thick clothes, bandaging on figures, cauterising on meat, etc.

In the directions given to the physician on entering into practice it is said: "Let thy hair and thy nails be cut short, keep thy body clean, wear white clothes, shoes on thy feet, carry a staff in thine hand". "Let thy appearance be modest, and thy spirit pure and without guile". On a visit to the dwelling of the patient, the physician should be well clothed, with bowed head, thoughtful, with quiet demeanour, keeping all considerations in view. On entering, words, thoughts, and feeling are to be directed to nothing but the treatment of the patient. There must be no talk of what happens in the house, and no information of the approaching end is to be given where this may be to the prejudice of the patient or of anyone else. Particularly is all intimacy with women discouraged, and the physician is warned not to gossip nor jest with them, nor to accept from them any present, unless perhaps it be food.

The medical honorarium varied according to the position of the patient, and at times was very high; the highest attainable position was that of court physician.

In war-time, the troops were accompanied by physicians.

Surgery constituted the summit of attainment of Indian medicine and although looked upon as ultimum refugiens it yet commanded an elaborate technique and was from its nature removed from the influence of speculation. The care and cleanliness which already distinguished the Indian physician in general was of particular value in this subject and assured a measure of success in many branches, which for long remained beyond the reach of other nations.

Surgical operations fall into eight categories: Excision (tumors, foreign bodies), incision (abscesses), scarification (inflammation of the throat), puncture (hydrocele, ascites), probing (fistula), extraction (foreign bodies), expression (abscesses), stitching (with threads of flax, hemp, sinew or hair).

The instrumentarium contained, according to Susruta, 101 blunt and 20 sharp instruments. To the former belonged various pincers, forceps, hooks, tubes, sounds, catheters, bougies, etc., also a variety of accessory instruments, such as the magnet (for the extraction of foreign bodies), cupping-horns, clyster-bags, etc. "The most important aid, however, is the hand, since without it no operation can be performed". Amongst the sharp instruments are included knives, bistouries, lancets, saws, scissors, trocars, needles, etc.

The instruments were fashioned in steel, the manufacture of which the Indians had understood from very early times, and were kept in wooden boxes.

Cauterization (particularly with potash) and burning (with actual cauteries of varying shapes and with boiling fluids), were preferred to cutting. "Burning is even more efficacious than cauterizing since it heals diseases incurable by medicines, instruments and caustics and because the diseases cured by it never return". Splenic enlargements were treated by the insertion, into the parenchyma of the spleen, of redhot needles.

Of dressings, there were fourteen varieties, named according to their structure; the materials used were: Cotton, wool, silk, linen; splints were made of bark, pieces of bamboo and other trees.

Arrest of bleeding was brought about by herbs, cold, compression and hot oil. Certain wounds were sewn (those of the head, face and windpipe). Operations took place only under auspicious constellations, were begun and ended with religious ceremonies: The surgeon had to turn to the west, the patient to the east. Narcosis was brought about by intoxication.

As far as ophthalmic surgery is concerned, treatment was here also fairly practical: The lens was looked upon as the seat of vision, but the description by Susruta of the operation for cataract leaves much to be desired in the matter of clearness.

Of obstetric manipulations, Caesarian section after death and embryotomy were practiced; combined version was unknown. The directions concerning the diet of pregnant women, care of the lying-in and of the newlyborn, are worthy of note."(4)

Their knowledge of the action and use of drugs was as advanced as their surgery. Hospitals were established then as now often in connection with their temples. Religion from the very beginning has been a source of our philanthrophy, and furnished the refuge and the means for the care of the destitute sick, and this great spirit has always met an equal response from the physician to furnish his skill and care for the relief of everyone everywhere at all time, whether in the hospital, home, or the wayside, regardless of circumstance or station, Christian or infidel, malfactor or saint.

Indian medicine was in possession of an imposing treasure of empirical knowledge and technical achievement; it reached to the height of a systematising, theorising school of thought, but it lacked the freedom of individual action essential to the pursuit of real science; it lacked too unprejudiced judgment and the possibility of criticism, not stopping short even of venerated doctrines. In the strange repressive cultural conditions is rooted the destiny that was to cut short the process of evolution and to lead to scholastic petrifaction. No new era has dawned for this middle age; as in the long-silent past so even today the edifice of Indian medicine stands unaltered, lonely, apart, far from the everflowing stream of progress.(5)

A comparative survey of Oriental medicine, even though extending over thousands of years, presents a uniform picture, only relieved by varying national colour.

Science, without the quickening influence of a critical method to test ever anew the foundations of belief, turns into erudition, dogmatic and fantastic; the originating thoughts fade away, leaving a mere empty husk behind. Individual initiative being crushed out by the pressure of convention, art sinks into craft, veiled in a nimbus of mysticism.(6)

It remained for the young Greek nation untrammeled by an old civilization, old convention, old religion to furnish the proper setting to take the stored-up knowledge of Persia, India, and Egypt and in its vigorous youth to sort out the scientific from the mythical and establish medical science on a true, free, and logical basis.

Askelepious is the first noted medical name in Greek history and became so renouned that he was later made the God of Medicine. Whether there was ever such a man seems to be subject to question. Some claiming he lived about 1000 B. C. and others that he represented but a legend. As a god, temples were built to him and a priesthood established. Hospitals and gymnasiums were added to the temple. The site of the temple was usually some healing spring or a particularly salubrious spot. In addition to the priests and largely indepedent of them, physicians called Asclepiads practiced in the temples and hospitals, and as the knowledge of medicine grew, great libraries were collected at some of these temples. This guild or cult of physicians, the Asclepiads, formed a very close association and became the leading physicians of the country. They had an oath known through the writings of Hippocrates as the Hippocratic oath, which well illustrates the high standard and ideals of the cult or guild.

The oath, which has come down to us through the Hippocratic Collection, runs as follows: "I swear by Appollo, the physician, by Ascelpios, by Hygieia and Panaceia and by all the gods and goddesses, calling them to witness that I will observe this my oath and carry out these my undertakings to the best of my power and understanding. I swear to honour him who has instructed me in this art as I honor my parents, to share his fate and, if occasion arise, to provide him with the necessities of life. His descendants shall be as my own brothers, and I will, if desired, teach them the art without money and without bond, imparting precepts. lectures and other knowledge to my sons, to my masters' sons and to the students admitted according to the laws of medicine, but to none other.

"I will employ dietetic measures to the use and profit of the sick, according to my capacity and understanding; If any danger and hurt threaten I will endeavour to avert them. I will yield to no entreaty to supply a poisonous drug nor give advice to him who demands it.

"Nor will I give to any woman the means of procuring abortion. I will order my life in purity and piety and so practice my profession. Also I swear by the gods to cut no one for stone, but to leave this operation to those whose profession it is.

"However, many houses I visit, it shall always be to the advantage and profit of my patients, and I will hold myself aloof from every intentional and injurious evil, in particular from sexual relations with men and women, free or slaves.

"I will keep silence on that which I hear or see in the course of treatment or in everyday life, which should not be repeated, holding such to be a secret. If now I keep my oath may I enjoy a happy life and a prosperous practice and be held in esteem for all time by all men, but if I break it may the opposite happen."

As today there were many practicing medicine who were not hampered by such high ideals.

"Sophists, too, ready of speech on any subject, driven by greed of fame or gold, were not backward in exposing their dilettante knowledge to the clear light of day by means of public discourses, whereby medical skill, judged from a lay point of view suffered not a little through their ignorance.

The Asclepiads, as their oath shows, resigned many operations, which from insufficient anatomical knowledge and technique could only be undertaken in the crudest manner (castration and lithotomy), to the "handicraftsmen" and denied their assistance to certain undertakings (abortion) which seemed to these medical eclectics inconsistent with their professional honour. Quacks and empirics, hangers-on, gladly took their place and, possessing nimble wit rather than knowledge, acquired a considerable following through their readiness to undertake forbidden or doubtful procedures.

These empirics, who occupied themselves chiefly with specialties (bladder-operations, eye and tooth troubles), from a transition stage to all kinds of dilettanti who, originally subordinate assistants to qualified physicians, gladly undertook the physicians' role themselves, lauding their insufficient methods of manipulations as infallible panaceas with all the fanaticism typical of narrow-mindedness."(7)

In addition to these were self styled herb doctors, does not that sound familiar, and pharmacists who concocted nostrums which would cure all manner of ills. Women doctors were excluded from medical practice but there were many who practiced secretly, treating diseases of women.

The age of history we are now considering was one of the most wonderful in the history of the world. Beginning about 1000 B. C. and lasting until from 300 to 500 A. D. At this time as we have noted before, India had reached the height of splendor. China and Egypt were the same, Constantinople was rising as was Rome, and the beautiful cities of Southern Spain with their great colleges. In the center and in touch with all of them arose the new state of Greece. A mixture of several races, untrammeled by old tradition in government or religion.

In many ways it reminds one of our own development. Unhampered it developed its government, schools, colleges, art, literature, and religion. Located on the sea it fostered travel and intercourse with distant marts and countries. The merchants established trading routes with capitols of the East. The philosophers, doctors and other students visited and studied in the universities of the great cities of Persia and India. Bagdad was their Paris and Alexandria in Egypt their Vienna. While their own Athens was the mecca for the whole educated world.

Medicine was frequently a family profession, and continued from generation to generation. On the Island of Cos was such a family. Also here was one of the greatest Asclepiads Medical schools and libraries in connection with the temple and hospital. Here was born in 459 or 460 B. C. and raised, he whom we now call the father of medicine, Hippocrates the 2nd. Son of Heracleider and Phaenarete, descendants of Asclepios and Hercules. After finishing his education in medicine by his father at Cos he traveled and studied all through Greece. Studying not only medicine but philosophy, art, rhetoric, etc. He visited Thessaly, Thrace, Asia Minor, Egypt and many other places, finally returning to Cos. He had two sons and a son-in-law who were doctors and counted among his most brilliant students. He died at Baressa about 377 B. C. His books and writing were collected by Ptolemy about 300 B. C., together with many other manuscripts now called the Hippocratic Collection.

To what does Hippocrates owe his distinction? What did he do? What did he add to the already great mass of medical knowledge?

He was recognized by his contemporaries as a great scholar in a great age. "The period of Hippocratic influence coincides with that of the highest development of the political, scientific and artistic life of Hellas, with the time when "the tree of mankind was in full flower." It is the epoch which brought forth the statesmanship of Pericles, the philosophy of Socrates, the historical writings of Thucydides; the era of Sophocles and Euripides, of Pheidias, Polycleitos and Praxiteles; of Polygnotos, of Zeuxis and Parrhasios. Never before nor since has so confined a space in so short a time contained such a wealth of intellect and nobility. The liveliest representation must fall short of reality where the only bounds to creative energy were those of symmetry, beauty and harmony, and where the rights of the individual were only restricted by the interests of the community."(8)

He had a high conception of his calling. The writing "The Physician" begins thus: "Touching his state of mind he must be heedful of the following. He must not only know how to be silent at the right time, but must lead a well-ordered life, for this adds much to his good repute. Let his disposition be that of a man of honor and as such let him behave to all honorable men in a friendly and easy spirit".

This high ethical view of the medical calling is, with Hippocrates, the incentive to the most laborious study, the most accurate clinical observation, the most conscientious treatment. The good of the patient constitutes the only goal of medical thought and action. "For where love of mankind is, there is also love of art."(9)

He recognized limitations. The author says rightly that only so much should be demanded of medicine as is not beyond its limitations. "For if any one assumes that art, or nature when art ceases, ought to be capable of performing a certain act, he is more than foolish."(10)

He had veneration for his predecessors. In Ancient Medicine he writes: "I do not as though its investigations were wrongly conducted; on the contrary, I maintain that its way of thinking came so near to truth that one should take it more into consideration and wonder at the discoveries made in spite of so great a lack of knowledge."(11)

He had an analytical mind. "Hippocrates was the first to raise medicine to independence. This independence could only be founded upon an act of renunciation whereby medical investigation made healing its first and only aim, passing over all that was not closely related to the comprehension of the course of disease and the processes of cure. Just as Socrates, by standing aloof from cosmological speculation and confining himself to ethics, applied philosophy to practical ends, so Hippocrates insisted upon the exclusively practical purpose of all medical thought and action. Medical matters of fact and prognosis were brought into the foreground and pathogenesis only considered insofar as the most transparent aetiological factors were concerned. This made freedom from transcendental influences possible, as represented in priestly medicine, and freedom also from the fantastic ideas of natural philosophy upon the genesis of disease, whereby the healing art was made independent, not only of theurgy, but also of philosophic speculation."(12)

He made a study of each patient as an individual. "In the Physician's Establishment" the physician is directed, when he comes to the patient, to seek to recognize similarities and dissimilarities (in relation to a condition of health); that is to say, that he shall, by observation of the patient, discover what manifestations indicate a deviation from the normal. In this connection he is enjoined to pay attention to the most salient phenomena first.

In addition to this the physician had to submit to examination not only the affected organ, but the condition of the patient's entire body, utilizing impressions from all the senses, going into the minutest details. However admirable the observation of such minutiae may have been, the essence of Hippocratism, "the Art", lay in the fact that it knew how, in individual cases, to decide which impressions collectively permitted of conclusions upon prognosis and indicated the occasion for therapeutic measures and the form they should take.

Each separate case of illness was to him a natural phenomenon, which was to be studied with all available aids to observation; personal and vicarious experience being brought to bear upon it with due regard to individual peculiarities and to its affinity with nature as a whole.

"A definite means of estimation must be sought," says the author of Ancient Medicine, "but a means, be it a weight or a number, which shall serve you as a guide you shall not find unless it be your bodily perceptions". Herein he denies the possibility of scientific accuracy in medicine and sees in individualization the essence of the art of healing. The physician imbued with the Hippocratic spirit is neither formularist nor theorizing systematic, but an individualizing healer.(13)

He distinguished between speculation and rationalism. "There is a seemingly fundamental inconsistency, not in the ideas of the master, but between the individual Hippocratic writings, which consists in the fact that Hippocrates on the one hand restricts medicine to the study of morbid life, to the occupation of healing, whilst on the other he takes into consideration the inter-relationship between the individual and the cosmos. He freed medicine from the purely speculative investigation into nature then prevailing and yet made rational therapeusis dependent upon natural science as a whole. The paralogism is based upon the confusion of deductive natural philosophy with genuine investigation into nature: Hippocrates rejected the former, the latter, according to his view, was built upon the foundation of experience with the framework of induction.

To Hippocrates, natural science was synonymous with comprehension of human nature under healthy and unhealthy conditions, in its relation to the outer world. The scanty anatomical facts, the speculative physiology of the nature philosophers, rightly seemed to him an insufficient foundation; working on strictly practical lines he could dispense with them, for to him nature was abundantly manifested at the bedside, only the power of observation being needed".(14)

His great ability lay in being able to be honest. Honest with himself, honest with the knowledge handed down to him by his predecessors both his own countrymen and other nations, honest with his examination of his patients, honest in his diagnosis, honest in his prognosis and honest in his treatment. He held himself strictly to the knowledge available, always seeking to add to this store, and cast aside the fantastic, the speculative, the pseudo religion, incantation, superstition, amulets, and all such cant.

He based his diagnosis strictly upon the evidence as presented by the patient and cast aside the supernatural, the evil eye, the evil spirit, astrological readings, and all sorts of fortunte teller's myths. And so he became the first great rationalist in medicine, always seeking for more knowledge but just as firmly demanding that it must be on a rational basis.

He added much to our knowledge of medicine and surgery. Gathered up the store of knowledge already attained, sifted it from the trash and made it available for his students and posterity.

This is his greatness. He made no epoch making discoveries in physiology, pathology, or surgery. The circulation of the blood, the secret of respiration and digestion were not known for a thousand years after his death. But he did sever medicine from myticism, speculation and all such unscientific rubbish which had blinded its progress for all the ages which preceded him.

Now let us each and everyone do our part to keep it clean. Hold true to the old, always striving after advance, but guarding always the lamp to keep it burning with a pure white light.

I have quoted very freely from History of Medicine by Dr. Max Neuburger, Volume I, of which the pages referred to are appended:

No. 1, Pages 6 & 10.
No. 2, Pages 11 & 13.
No. 3, Pages 26, 27 & 28.
No. 4, Pages 47 & 57.
No. 5, Page 59.
No. 6, Page 83.
No. 7, Page 101.
No. 8, Page 126.
No. 9, Page 129.
No. 10, Page 130.
No. 11, Page 130.
No. 12, Page 131.
No. 13, Pages 133 & 134.
No. 14, Page 135.

ECONOMY FIRST!

"Abie's cold is better and we've still got a box of cough-drops left."

"Oh, vot extravagance! Tell Izzie to go out and get his feet vet."

MODERN ASPECTS OF NUTRITION

THE PATHOLOGY OF FAULTY NUTRITION

5. Faulty Food with Reference to Derangement in the Process of Metabolism Through Impairment of the Endocrine System.

Victor E. Levine, M. A., Ph. D.,
Professor of Biological Chemistry and Nutrition, College of Medicine,
Creighton University, Omaha, Nebraska.

INTRODUCTION

In the foregoing paper we discussed the relation of food to energy metabolism. We emphasized the fact that faults in alimentation may bring about variations in the heat production, in temperature, and in the oxidative processes in the organism. The recognition of changes in the energy relations as a result of faulty foods has, indeed, a practical bearing. Among the causes of subnormal temperature we must not fail to include a state of malnutrition, and in the conditions giving rise to hyperpyrexia we must not only consider infections but also metabolic derangements not resulting from parasitical invasion, as is the case in dehydration fever.

The fact that there takes place a fall in basal metabolism in malnutritional conditions is of great importance in a consideration of hypofunction of any one of the glands of internal secretion. Labbe and Stevenin(1) estimated the basal metabolism in ten subjects suffering from prolonged undernutrition as a result of a nervous lack of appetite, or as a result of anorexia due to digestive disturbances. The basal metabolism was reduced from 11 to 30 per cent in the majority of cases. Anorexia and gastro-intestinal disturbances may occur in exophthalmic goiter, in tuberculosis and in certain febrile conditions, but in these conditions there is an increase in the basal metabolic rate. It is also to be remembered that a hyperfunction of any of the endocrine glands may give a basal rate higher than the normal but somewhat lower than is to be expected from the severity of the clinical symptoms because of the existence in the patient of a state of malnutrition.

THE ENDOCRINE GLANDS AND BASAL METABOLISM

In a general way we may regard the organs of internal secretion as regulators of metabolism through hormonic control. In complete atrophy of the thyroid or after removal of the thyroid, the metabolic rate sinks to -40. Several investigators have found that suprarenal expiration after thyroidectomy causes a further lowering of the basal rate. But even in the absence of both thyroid and adrenal glands, the organism still continues to produce energy. We must necessarily come to the conclusion that the other glands of internal secretion, such as the hypophysis, the pineal gland, the sex glands and the pancreatic islands, also exercise a calorigenic influence. From our present knowledge we are led to believe that the hormones produced by the endocrines are factors involved in energy metabolism. An increase in the hormone output of a gland, as in hyperthyroidism, hyperadrenia, hyperpituitarism, leads to an increased rate, while changes in the endocrine glands, as in hypopituitarism, hypothyroidism, and hypoadrenia lead to a smaller output of hormone and consequently a lessened rate of metabolism. In the pages following we wish to cite evidence enough to convince the most skeptical that faulty food causes marked atrophy or hypertrophy of the endocrine glands, and other changes of a degenerative character.

THE THYMUS

In marasmus and the chronic wasting disorders of children atrophy of the thymus is often observed. Aron and his associates(2) have found that the thymus displayed the greatest evidence of injury in thirty-five infant cadavers dying of chronic malnutrition. Lopex-Lomba and Randoin(3) have shown that almost complete disappearance of the thymus takes place with diets lacking water-soluble B. Shuto(4) has also noted in starvation and in vitamin B deficiency, atrophy of the thymus and of the lymphatic glands. A similar condition of the thymus has also been reported by Korenchevsky(5) in beri-beri. Cramer(6) has observed in the absence of fat-soluble A such profound atrophy in the organ that it was hardly visible at autopsy. Hintzelmann(7) has also reported atrophy of the ductless glands in rats kept on a diet deficient in the anti-opthalmic vitamin. Lopez-Lomba(8) has found atrophy of the thymus in guinea pigs rendered scorbutic. Du Castel(9) has investigated the thymus in rickets, and has found it hypertrophied.

THE THYROID

The next gland to be considered is the

thyroid. Marguerite Davis(10) fed whole milk and skimmed milk to young growing puppies. She found interesting changes in the thyroid. The acini in the skimmed milk series were larger and filled with colloid. The thyroid in the puppies subsisting on whole milk looked more meaty and contained less colloid. Lopez-Lomba(11) observed in avian beri-beri that the thyroid first gained in weight, and later underwent atrophy. Verzar and Vasarhelyi(12) found that the hormone of the thyroid is capable of stimulating metabolism in surviving striated muscle and in surviving heart muscle of normal animals and also of animals with a deficiency disease. On the other hand, these investigators found that extract of the thyroid of avitaminous animals had no stimulating effect on striated muscle or heart muscle of normal or avitaminous animals. They conclude that the fall in the basal metabolic rate observed in deficiency animals is associated with a hypofunction of the thyroid. Lopez-Lomba(13) observed in avitaminosis C that the thyroid first gained, then decreased in weight and finally suffered hemorrhagic infiltration.

Other deficiency diseases also show changes in the thyroid. In pellagra this gland is sometimes affected. Of 316 cases, Beeson(14) reported 25 with thyroid complications. Morse(15) also found in this disease severe atrophic changes in the organ. Enlargement of the thyroid has been observed in rickets and in oesteomalacia, a disease, which, according to Ogata(16), develops in adults under nutritional conditions similar to those giving rise to rickets in the young.

We have already spoken at length of the relation of iodine to the anatomic and functional integrity of the thyroid. We have in a previous paper discussed simple goiter, colloid goiter and cretinism in the light of deficiency diseases. In this connection it is interesting to state that iodine has yielded good clinical results even in hyperthyroidic conditions.

The subject of iodine is so absorbingly interesting that we shall say a few more words about it. In the great long ago iodine was widely distributed throughout the earth. Through the action of natural forces, the readily soluble sodium or potassium iodide has been washed down into the sea, which now seems to be the chief source of the supply. Near-sea vegetation is rich in iodine, and animal life near the sea-coast does not suffer from lack of iodine. According to Loir and Legangneux(17), sea air, due to the fact that seaweeds yield the iodine to the air by their spores and debris, contains more of this element than inland air.

The inland regions, on the other hand, in central Asia, in the Pyrenees, in Switzerland, in the mountainous regions of Germany, Austria and France, in the Great Lakes basin, and in the Cascade mountain region are devoid of iodine and are well known as goiterous districts. It is interesting to note the great increase in the incidence in Vienna after the Emperor Francis Joseph presented the city with a mountain water supply. Seattle, Portland and Tacoma have also shown similar increase in goiter as a result of water supply hailing from the Cascade Mountains. Lack of iodine not only affects human beings, but domestic animals as well. It is said that the incidence of goiter in the dogs of Chicago is greater than in the canine population of Constantinople.

Iodine in the form of iodide is not merely found in water but also in ordinary salt. It is unfortunate that salt from inland sources, such as the Great Salt Lake, contains practically no iodine. It is much more unfortunate that the commercial refining processes bring about the elimination of iodine present in some salts. For table use the ordinary crude salt is much to be preferred to the finely pulverized beautifully white salt offered for sale. Zeller(18) reports good results in the prevention and treatment of goiter with iodized salt. The best effects were secured in new-born infants of mothers who had taken the salt during their pregnancy.

In the near future iodine shortage will be a thing of the past, for already iodized salt for the table is on the market for every day use. Iodized cod liver oil is also now available. In some cities like Rochester, iodine is added to the water supply. No one need fear, however, iodine poisoning, for only small homeopathic doses are required to cure or prevent simple or endemic goiter.

THE PARATHYROIDS

The parathyroid is another gland the integrity of which is influenced by food. Ethel M. Luce(19) has been able to demonstrate as a result of deficiency of calcium in the diet, a progressive total enlargement of the parathyroid gland. The enlargement was due to hyperplasia. The parathyroid increased up to five times the size of the normal gland for an animal of equivalent age.

THE ADRENALS

That the adrenal glands undergo definite changes has been observed by many investigators. McCarrison(20) found in pigeons restricted to poliched rice or autoclaved rice, hypertrophy of the adrenals. Lopez-Lomba(21) noted in avian beri-beri a decrease followed by an increase in the weight of the adrenals. Verzar and Beznak(22) reported in latent and especially severe avitaminosis B, hypertrophy of the suprarenal capsules, while contrary to McCarrison's findings the adrenalin content diminished. Verzar and Beznak(23) are of the belief that vitamin B influences colesterol metabolism through the cortical tissue of the suprarenal capsules. According to Verzar and Peter(24) the changes in the adrenals as a result of vitamin B deficiency is limited to hypertrophy of the cortical substance. The enlargement can be demonstrated by histological means and by weight determinations of cortical and medullary tissue. In normal rats the ratio between weight of medullary substance and cortex was approximately 1:9. In rats on vitamin B deficiency the ratio changed to 1:14. In normal rabbits the ratio was found to be 1:8, while in these animals maintained on a diet free of vitamin B, the ratio was 1:12. Suzuki(24) also maintains that a state of decreased suprarenal activity exists in infantile beri-beri.

In pellagra Modinos(25) observed enlarged adrenals, but Wilson(26) found these glands were less than normal in weight. Atrophic changes in the adrenal medulla of pellagrins were noted by Morse(27). In rickets Stolzner(28) found the adrenal bodies smaller in size and with lessened adrenalin output. McCarrison(29) described in scorbutic guinea pigs enlarged and congested adrenals, associated with diminished production of adrenalin. According to Lopez-Lomba(30), the adrenals in scorbutic guinea pigs first gain in weight, then decrease and finally undergo hemorrhagic infiltration.

THE SEX GLANDS

Still other endocrine glands to suffer markedly are the sex glands. Sipperstein(31) pointed out that the underfeeding of young rats resulted in the reduction of the number of mitoses in the testes and an arrest of the normal process of histological differentiation. Portier(32) cited changes in the testes of pigeons on diets deficient in certain food accessories. The disturbances of function was due at first to a decrease and later to a complete arrest of spermatogenses, followed by resorption of spermatazoa and spermatids. Lindsay and Medes(33) observed in guinea pigs during scurvy and inanition, retardation of development and degeneration of the spermatazoa, but no hypertrophy of the interstitial cells. Souba(34) demonstrated that a diet deficient in vitamin B, but adequate in all other particulars, affected the testes to a greater extent than any other organs. They not only failed to develop, but there was also ultimate atrophy. Degenerative changes in the testes in avian beri-beri have also been observed by Korenchevsky(35).

The female organs are also influenced by diet. Aron and his associates(36) found that the ovaries in chronic malnutrition observed in infants showed great evidence of injury. Jackson and Stewart(37) reported that in inanition the ovaries were distinctly subnormal. Degenerative changes in the male and female organs of reproduction have also been noted as a result of a diet lacking fat-soluble E, the reproductive vitamin.

FOOD AND FERTILITY

Faulty food affects the integrity of the endocrine glands, and the sex glands come in for their share of deterioration. The result of the degenerative changes in the sex glands is reflected in a definite lowering in both animals and human beings in the tone of sex instinct and sex expression, in lessened fertility, and even in sterility. These effects are not only due to definite changes in the reproductive organs themselves but also to a general lowering of the metabolic level as a result of degenerative conditions in other glands. Besides increase in growth, McCollum and his associates(38) use fertility as a measure of the adequacy of any dietary regime. According to them an experimental diet is not pronounced adequate if rats or even their offspring show lessened fertility or fail to produce altogether. In this connection, it is interesting to recall that in diabetes, a disease in which nutritional insufficiency may be the result of an impaired carbohydrate metabolism, impotence is common and may be an early symptom. Conception is rare, and if it occurs, absorption of the foetus is apt to take place.

That food is a factor in animal and human fertility finds strong and convincing evidence in the investigations of McCollum, Nina Simmonds(39), McComber(40), Reynolds and McComber(41), Slonaker and Card(42), Evans and Bishop(43), Barnet Sure(44), Mattill and associates(45), Daniels and Houlton(46), and others.

THE PANCREAS

Among the many important contributions of McCarrison(47), one lies in the fact that chronic lack of vitamin B in the food leads to atrophy of the cells upon whose functional perfection the normal metabolism of carbohydrate depends. Lopez-Lomba(48) has corroborated McCarrison's findings in reference to the pancreas. Several investigators have pointed out that the liver undergoes marked changes as a result of faulty food. It is likely that these liver changes depend upon the disintegrity of the pancreas. It has been repeatedly shown that depancreatized dogs suffer marked fatty degeneration of the liver. It may be of interest to know in this direction that carbohydrate possesses the ability to protect the liver from damage.

DIABETES AND VITAMIN B DEFICIENCY

The cause of diabetes has been largely laid at the door of the pancreas. Perhaps other organs like the liver are also accomplices. Faulty food is known to bring about pathological changes in the pancreas and in the liver. A diet deficient in vitamin B brings about atrophy of the pancreas. Should such an incomplete diet be excessively rich in carbohydrate, one can readily see how the islands of Langerhans would also fatigue as a result of overload. Furthermore, such an inadequate and one-sided diet would give rise to deterioration in other glands besides the pancreas. With the endocrine system underfunctioning, excessive food would go to fat, especially under the conditions of a sedentary life.

It seems from our present stage of knowledge that the etiology of diabetes rests upon a tripod, the individual legs of which are (1) lack of vitamin B in the diet, (2) excessive carbohydrate intake, and (3) a sedentary life. That these three facts fit into actual human experience may be seen in India among the rice-eating Hindus, and among the Jewish people. McCarrison(49) observes that diabetes is very common among the rice-eating classes of India, if their habits are sedentary and especially if they eat largely of sweetmeats. Joslin(50) and others have pointed out the great incidence of diabetes among Jews, especially those suffering from overweight. Any one familiar with Jewish diabetics will at once recognize that they are drawn largely from the rank of those who lead a sedentary life, and whose diet is exceptionally overdone in carbohydrate and extremely poor in fresh fruit and vegetables. We may describe this diet to use the language of McCollum, as essentially a meat-bread-potato diet, poor in dairy products, fruit and vegetables. It is interesting to mention that Desgrez, Bierry and Rathery(51) have already tried out the effect of vitamin B on diabetics on insulin treatment. They state that the result of the addition of vitamin B is to enhance and to prolong the effect of the insulin injected. A longer spacing between the doses is thus made possible.

MUSCLE WEAKNESS

The function of the muscular system is greatly influenced by faulty food. Experimentally it is easy to produce by a small change in the diet of growing animals all degrees of activity and lethargy, from extreme restlessness to absolute paralysis. A rachitic diet, for illustration, gives rise to defective bone calcification. It is a well known fact that defective calcification goes with weak muscles, while perfect bone formation is associated with muscles of great strength and contractile power. Inappropriate food not only affects profoundly the voluntary muscles, but also the heart muscle, and the smooth musculature of the gastro-intestinal tract. We shall some time later devote ourselves to a discussion of the serious damage to the gastro-intestinal tract and also to the myocardium as a result of faulty food.

SUPRARENAL FUNCTION AND VIGOR

Faulty food may bring about a diminution of muscular tone through impairment of the hormone-producing glands. Languor and lack of muscle tone are readily recognized accompaniments of suprarenal disturbance. Malnutrition may become responsible for suprarenal deficiency, which in turn may bring about muscular depression and abnormal fatigue. According to Ehrstrom(52), the fall and winter bring on a vitamin deficiency, which manifests itself in the form of a languid and tired feeling. Ever since the days of Addison(53) there has been a growing appreciation of the loss of function of the adrenals in relation to a decrease in physical vigor. It is interesting to mention here that Durrant(54) has succeeded in maintaining suprarenalectomized rats in apparent health over considerable periods of time. On superficial observation they appeared to be normally alert and active, but over a period of hours or days, however, they manifested markedly diminished activity. The suprarenals are important in maintaining what is vaguely described as vigor, pep, push or drive.

THE PANCREAS AND MUSCLE WEAKNESS

Very recently Seale Harris(55) has brought to light a new condition known as hyperinsulinism. In his brilliant contribution he writes about patients who show symptoms of hypoglycemia, which he attributes to an excess of insulin produced by the pancreas. This excess makes itself manifest several hours after a meal. The patients he describes complain of the fact that one hour before the noon meal they feel weak and nervous and so hungry that they cannot work. Relief from the symptoms of hypoglcemia comes by taking candy, soft drinks or milk, eating fruit or almost anything. One patient says, "I get so hungry and weak every day about an hour before meals that I feel as though I will die if I do not eat something. Eating anything always relieves me, and I am comfortable for three or four hours after meals". The blood sugar of this patient taken at noon was 0.065 per cent. After a full meal, two hours later, the blood sugar was 0.13 per cent.

HYPOGLYCEMIA AS A FACTOR IN MUSCLE WEAKNESS

The weakness and nervousness observed in Harris' patients are probably due to an over supply of insulin from the pancreas. Hyperinsulinism or dysinsulinism does not always have to be the cause. According to him a patient with a carcinoma with almost complete occulsion of the esophagus, or one with a complete stenosis of the pylorus due to a tumor or ulcer may be literally starving. Such unfortunate people may show a hypoglycemia. Roffo and Rivarola(56) observed in cancer of long standing a hyperglycemia, but in the condition of cachexia, a hypoglycemia. It is not to be forgotten that chronic undernutrition itself without any signs and symptoms of organic pathology may give rise to a hypoglycemia. It is not at all unlikely that muscular dystrophy, which is concommittant with a state of hypoglycemia, has a nutritional inadequacy as one of its etiological factors.

EXCESSIVE FOOD AND OBESITY

Thus far we have focussed the light on food inadequacies with relation to the endocrine glands. We shall now devote some space to the effect of excessive food intake upon these important organs. The caloric content of food should measure up to the basal metabolism plus the work of digestion plus the energy expenditure involved in muscular work. The superfluous calories, that is those above the physiological requirements, throw an extra task upon the organs regulating metabolism. If these organs are unequal to the task or become fatigued, the unconsumed food is deposited as fat. The endocrines may become so exhausted from overstrain as a result of excessive food, that they may even become unable to handle a very low quanity of food. Due to the overtaxing of the endocrine glands a so-called exogenous type of obesity may be converted to an endogenous type. A corpulent person, who has habituated himself to get along with little food, may be surprised to find that he still, as a result of the previous deterioration of the organs controlling metabolism, continues to carry the same weight. In view of the possible presence in one individual of the endogenous as well as of the exogenous type of obesity, it may be necessary, in order to bring about reduction in weight, to administer an endocrine gland like thyroid, and to cut down at the same time the daily food intake.

Obesity is rare in the young because the endocrine system is so active that it can handle with ease an excess of food. When the endocrine glands grow less active with advancing years, the tendency to mobilize fat increases. Women at the menopause also incline to weight increase, although the basal metabolism may remain normal.

Our next discussion will center on the relation of food faults to processes of intermediate metabolism.

BIBLIOGRAPHY

1. Labbe and Stevenin. Presse medicale, 1925, 33, 401.

2. Aron et al. Monatsschrift fur Kinderheilkunde, 1925, 29, 496.

3. Lopez-Lomba, J. and Randoin, Mme. Comptes rendus des academies des sciences, 1923, 176, 1249.

4. Shuto, M. Journal Osaka Medical Society. 1924, 23, No. 1. Japanese Medical World, 4, 100.

5. Korenchevsky, V. Glands of internal secretion in experimental beri-beri. Journal of Pathlogy and Bacteriology, 1923, 26, 382.

6. Cramer, W. Lancet. 1921, 11, 1202.

7. Hintzelmann, U. Mikroskopische Untersuchungenan den innersekretorischen Organen vitamin arm ernahrter Ratten. Arch. exp. Path. Pharm., 1924, 100, 353.

8. Lopez-Lomba, J. Compes rendus de l' academi des sciences, 1923, 176, 1752.

9. Du Castel, R. Comptes rendus de la societe de biologie, 1908, 65, 725.

10. Davis, Marguerite. Effect of a ration containing whole and skimmed milk on young growing puppies. Journal of Metabolic Research, 1923, 3, 711.

11. Lopez-Lomba, J. Comptes rendus de l' academie des sciences, 1923, 176, 1417.

12. Verzar, F. and Vasarhelyi, B. Archiv der gesammten Physiologie (Pflugers), 1924, 206, 675.

13. Lopez-Lomba, J. Comptes rendus de l' academie des sciences. 1923, 176, 1752.

14. Beeson, C. F. Journal of the American Medical Association, 1914, 63, 2129.

15. Morse, P. F. Journal of Laboratory and Clinical Medicine, 1916, 1, 217.

16. Ogata, M. Hegar's Beitr. z. Geburtsch. 18, Heft No. 1.

17. Loir, A. and Legangneux, H. Bulletin de l' academie de medicine, Paris, 1925, 93, 243.

18. Zeller, F. Schweizerische medizinische Wochenschrift, Basel. 1925, 55, 274.

19. Luce, Ethel M. Size of parathyroids of rats and effects of a diet deficient in calcium. Journal of Pathology and Bacteriology, 1923, 26, 200.

20. McCarrison, R. British Medical Journal, 1919, 11, 200.

21. Lopez-Lomba, J. Comptes rendus de l' academie des sciences, 1923, 176, 1417.

22. Verzar, F. and Beznak, A. V., Arbeit, der II Abt. wiss. Tisza-Ges. in Debreczen, 1923, 1, 75.

23. Verzar, F. and Peter F. Archev der gesammten Physiologie (Pfluger's), 1924, 206, 659.

24. Suzuki, T. Tokyo Igakukai Zasshi, (19) 1916; Jikiva Zasshi, 1916, No. 199, 41.

25. Modinos, P. Bull. soc. Med. d. Hop. de Paris. 1916, 640.

26. Wilson. Appendix to Report No. 2 on pellagra epidemic. Port Said Public Health Department, Egypt, 1916.

27. Morse, P. F. Journal of Laboratory and Clinical Medicine, 1916, 1, 217.

28. Stolzner, J. F. Kinderh. 51, 73, 199; 53, 515, 672.

29. McCarrison, R. Indian .Journal of Medical Research, 1919, Aug. 16, 200.

30. Lopez-Lomba, J. Comptes rendus de l' academie des sciences, 1923, 176, 1752.

31. Sipperstein. Anatomical Record, 1921, 20, No. 4.

32. Portier. Comptes rendus de l' academie des sciences, 1920, 170, 755.

33. Lindsay, B. and Medes, G. Histological changes in the testes of the guinea pig during scurvy and inanition. Proceedings of the Society for Experimental Biology and Medicine, 1924, 22, 177.

34. Souba, A. U. American Journal of Physiology, 1923, 64, 181.

35. Korenchevsky, V. Glands of internal secretion in experimental avian beri-beri. Journal of Pathology and Bacteriology, 1923, 26, 382.

36. Aron et al. Monatsschrift fur Kinderheilkunde, 1925, 29, 496.

37. Jackson and Stewart, Journal of Experimental Zoology, 1920, 30, 97.

38. McCollum, E. V. Newer Knowledge of Nutrition, 2nd edition, 1922.

39. Simmonds, Nina. Observations on reproduction and rearing of young as influenced by diet. American Journal of Hygiene, 1924, 4, September supplement.

40. MaComber, D. Journal of the American Medical Association, 1923, 80, 978.

41. Reynolds, E. and MaComber, D. Journal of the American Medical Association, 1921, 77, 169.

42. Slonaker, J. R. and Card, T. A. American Journal of Physiology, 1923, 64, 35, 167, 203, 297.

43. Evans, H. M. and Bishop, K. On the relations between fertility and nutrition. Journal of Metabolic Research, 1922, 1, 319, 335; 1923, 3, 233.

44. Sure, B. Journal of Biological Chemistry, 1923, 43, 457; 1923-24, 58, 709; 1924, 62, 371.

45. Matill, H. A. and Conklin, R. E. Journal of Biological Chemistry, 1920, 43, 137. Matill, H. A. and Stone, N. C. Journal of Biological Chemistry, 1923, 55, 443. Matill, H. A., Carman, J. S. and Clayton, M. M. Journal of Biological Chemistry, 1924, 61, 729.

46. Daniels, Amy L. and Houlton, Mary K. Journal of Biological Chemistry, 1925, 63, 143.

47. McCarrison, R. Studies in Deficiency Disease, Oxford University Press, 1921.

48. Lopez-Lomba, J. Comptes rendus de l' academie des sciences, 1923, 176, 1417.

49. McCarrison, R. Problems of Food with special reference to India. Journal of the Royal Society of Arts, 1925, 73, 137.

50. Joslin, E. Journal of American Medical Association, 1924, 83, 727.

51. Desgrez, A. Bierry, H. and Rathery, F. Utilite de la vitamin B et du levulose dans la cure par l'insuline. Comptes rendus de l'academie des sciences, 1923, 177, 795.

52. Ehrstrom, R. Lancet, 1924, 1, 1278.

53. Addison. On the Constitutional and Social Effects of Disease of the Suprarenal Capsules, London, 1855.

54. Durrant, E. P. Studies on Vigor. I. Effect of Adrenal Extirpation on Activity of the Albino Rat. American Journal of Physiology, 1924, 70, 344.

55. Seale Harris, Hyperinsulinism and Dysinsulinism. Journal of the American Medical Association, 1924, 83, 729.

56. Roffo, A. H. and Rivarola, J. Semana Medica, 1924, 2, 588.

LEAD POISONING FROM FACE POWDERS

Plumbism was always a diagnostic hobby of Dr. Richard C. Cabot. The difficulty is not in diagnosing the condition but in thinking to look for it. Lead poisoning may cause many obscure symptoms and Dr. Nellis B. Foster in his new book, "The Examination of Patients," tells of a woman who consulted several physicians for relief from attacks of abdominal pain and vague pains in the arms. She was treated for "nervous exhaustion" and suspected of having gallstones. Someone discovered that it was due to lead poisoning and face powder was found to be the offending agent.

Besides being found in painters, lead poisoning is seen in those employed in making it.

SOME STUDIES IN GLAUCOMA*

Earl B. Brooks, M. D., F. A. C. S., Lincoln, Nebr.

Glaucoma has been defined by Priestly Smith as an excess of pressure within the eye plus the causes and consequences of that excess.

PATHOGENESIS: The contents of the eye are continually varying in health and disease. It is thought that the fluid which fills the chambers of the eye is secreted or transfused from the ciliary body. The fluid follows two main routes: (1) Forward into the posterior division of the anterior chamber; (2) backward into the vitreous body. The latter of these two streams eventually finds its way through the suspensory ligament to join the anterior stream. The united volume of fluid passes forward through the pupil to the crypts of the iris out into the blood vessels. Whether the escape of the fluid is due to the pull of osmosis, the push of pressure, or a pump action, it is generally admitted that there is such a flow, with the highest pressure at the secretion area (the ciliary body) and the lowest pressure at the area of excretion (the angle of the anterior chamber). On the contrary Magitot(2) regards the eye as a closed space with an internal pressure of 25 mm Hg, traversed by arteries with a pressure of 70 mm Hg and by veins with a pressure of 40 mm Hg. He believes that the aqueous is of the same nature as the cerebro-spinal fluid and the perilymph of the ear. He denies its origin from the ciliary body and maintains that it is secreted at the beginning of life by glial cells and is separate and distinct from the lymph of the eye. He lays stress on the role of the choroidal tunic with its free arterial supply being in reality four times as thick as post mortem sections show it to be. Its real purpose is maintenance of the normal tonus of the eye. The blood supplied through the choroid is controlled by centers of three kinds, (1) bulbar, (2) cervico cephalic, and (3) peripheral. He ascribes the glaucomatous rise in pressure to vascular changes in the choroidal reservoir.

PATHOLOGICAL ANATOMY: Most of the glaucomatous eyes that come to section are those of the latest stages; so that our study of the etiology and pathology of the early stages of glaucoma have been rendered difficult and for the most part based on observations of clinical material. Despite these difficulties various workers have from time to time added their contributions to our knowledge of this phase of the subject.

In glaucomatous eyes the veins, the lymph spaces surrounding them and the neighboring sclera show cellular infiltration and the endothelial lining has undergone proliferation. Ligation of all four veins by Koster brought on high tension immediately with pupil dilated, anterior chamber shallow, iris vessels filled with blood and marked swelling of the ciliary body.

SCHNABEL'S(3) CAVERNOUS ATROPHY: In 1892 Schnabel advanced the view that the cupping of the glaucomatous disc was not due to an increase in intra-ocular pressure but to an active atrophy. He thought that the lamina cribrosa was not pushed back by pressure but was pulled back by the shrinking of the wasting nerve. In the part of the nerve within the scleral ring he observed microscopic holes which by enlargement and coalesence led to the formation of a cavernous degeneration.

Von Greafe(4) was the first to observe a transitory leveling of the glaucoma cup after successful iridectomy. And Holth(5) has repeatedly seen complete and permanent disappearance of glaucomatous excavation after successful filtration operations. Von Graefe noticed that where acute symptoms supervened on a previous chronic glaucoma that the cupping thus produced showed a greater tendency to recede when the pressure was withdrawn, than did that which was the outcome of slow prolonged intraocular pressure.

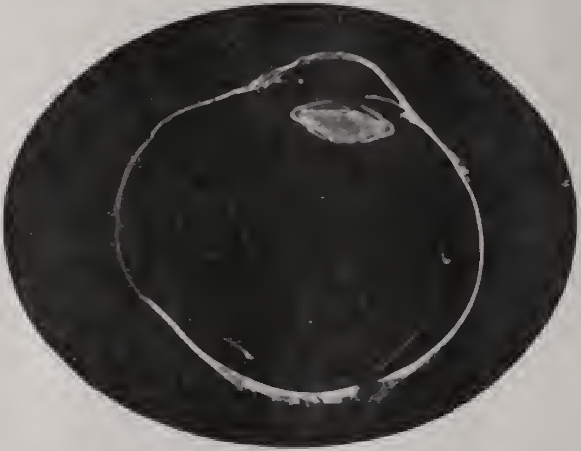


FIG. I. Specimen obtained from Army Medical Museum. Showing wide peripheral anterior synchiae. Fibrosis of iris. Atrophy of ciliary body. Deep cupping of optic disc.

---

*Read before Lancaster County Medical Society, Lincoln, January 7, 1925.

It is the rule following successful filtration operations for the relief of tension, that the visual acuity ceases to fall, and the fields enlarge. These are independent of any diminution of cupping of the optic disc. In a small number of cases the optic atrophy progresses and consequent failure of vision progresses despite relief of tension.

FIBROSIS OF THE PECTINATE LIGAMENT: The pectinate ligament is nothing more than a regular and open network formed of interlacing fibers which are a direct continuation of longitudinal and circular bundles of the sclera about the venous sinuses of Schlemm's canal. Thomas Henderson advanced the view that a structural change in the pectinate ligament is responsible for an obstruction to the ready access of aqueous fluid to Schlemm's canal.

CLOSURE OF THE FILTRATION ANGLE: Is in all early cases caused by the base of the iris being pressed against the periphery of the cornea. At first the closure is simply mechanical, but the aqueous is able to filter along the loose iris stroma through the meshes of the pectinate ligament into Schlemm's canal. This is the condition in early congestive cases and up to quite a late stage in the simple or non-congestive type. In all cases alike it is only a question of time until the opposed surfaces of iris, base and corneal periphrey become adherent to each other. A further stage is believed to have been reached when the iris tissue becomes so firmly compressed as to occlude the spaces which normally allow the passage of fluid through the iris stroma. This interference with the vascular circulation of the iris leads eventually to atrophy. The final stage is a drawing back of the iris when the ciliary processes retract. This process is so extreme that the iris is often stretched or even torn through.

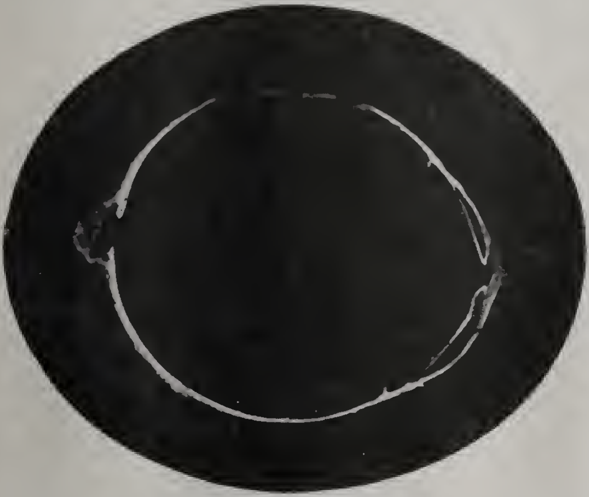


FIG. II. Specimen obtained from Army Medical Museum. Showing: Trachoma for 8 years. Hydrophthalmos following perforating corneal ulcer. Anterior synechiae. Cupping of optic disc.

SHALLOWING OF THE ANTERIOR CHAMBER OF THE EYE: Is an anatomical feature which is met with sooner or later in the vast majority of cases of glaucoma. It occurs very early in acute congestive glaucoma and at a much later period but with great constancy in the simple non-congestive form. Incident to the period of life in which glaucoma commonly occurs the lens grows larger. Likewise in old age the ciliary processes become more bulky. These two conditions acting together narrow the circumlental space. The vitreous is pinioned behind this interposed diaphragm and pushes it forward. In addition there occurs during the acute attack a thickening of the iris from venous hyperaemia.

ETIOLOGY: We shall endeavor to mention briefly some of the causal factors that have been suggested remembering that a pathological access of ocular tension may be determined:

1. By interference between the balance normally held between secretion and excretion in the eye.
2. Obstruction to the escape of blood from the eye.
3. By a combination of these influences.

AGE: Glaucoma increases slowly at first, more rapidly later in each decade until about the sixtieth year. Between sixty and seventy it is about as frequent as between fifty and sixty and decreases after seventy.

VASO-MOTOR CONTROL: The relations in vaso-motor control and the effect toxic and autotoxic, substances may best be expressed by quoting the words of the late Samuel D. Risley(6). He says "Glaucoma is a disease coming on at the age when wear and tear, harassing vicissitudes, misfortunes, exposure, overwork and vicious living have sapped the physiological foundation of life; when infections have found entrance to the structure through the doorway of the epithelium and when a variety of toxic, auto-toxic and other influences have set up vascular and cardiovascular diseases, associated nephritis, uveitis, high blood pressure, etc." In fact, glaucoma rarely occurs in individuals in good general health.

RELATION OF ENDOCRINES TO GLAUCOMA: Recently much attention has been given to the secretion of the ductless glands as a causal factor in glaucoma.

Hertel(7) believes that the osmotic ebb and flow of the body fluids, inclusive of those of the aqueous and vitreous chambers is influenced by the thyroid gland. Through the courtesy of Dr. Clarence Emerson we had occasion to observe a case of glaucoma in a patient following partial thyroidectomy. This patient improved under administration of thyroid derivatives and is now in good health with normal tension.

Henri LaGrange(8) reported two cases in which glaucoma occurred associated with painful and irregular menstruation. Intramuscular injections of corpus luteum over a period of six to eight months corrected the menstrual irregularity and the paroxysms of glaucoma disappeared. Dr. D. D. Sanderson(9) reported having observed glaucomatous attacks in girls of the teen age, worse at the times of the menses and relieved by myotics, massage and iodine.

SEX: A study of the influence of sex on the incidence of glaucoma show that females suffer rather more frequently than males. Priestly Smith(11) gave a ratio of 56.9% to 43.1% respectively. Kagoshima(10) of Japan worked out a ration of 61.9% for women and 39.1% for men.

The non-congestive form is found oftener in males while the congestive form is nearly twice as common in females. It has been suggested that the unstable condition of the nervous system at the climacteric may, in part, account for this disparity.

HEREDITY: The influence of heredity on the incidence of glaucoma is revealed in both race and family. Jews, Egyptians and certain races of Negroes are especially liable to the disease. Some suggested modes of action of heredity are: (1) a smaller size of eye, (2) a want of normal development, (3) conditions which predispose to nervous and vascular storms, (4) conditions of environment.

ERRORS OF REFRACTION: Fuchs(12) says, "A predisposition toward inflammatory glaucoma appears to belong principally to the hypermetropic eye whereas myopic eyes are to be regarded as having almost complete immunity against the disease." On the other hand Priestly Smith, Gilbert and Haag contend that the myope is not safe from hypertension.

MYDRIATICS: Some of the causes of dangerous mydriasis are: (1) Abuse of drugs. (2) Exclusion of light from the eye. (3) The influence of violent emotions. (4) The effects of depressing diseases or allied conditions.

Elliott's advice is "Do not use a mydriatic before ascertaining the tension of the eye, and the condition of the optic disc. Do not allow a doubtful case to pass from your hand until miosis is established".

Another abuse of drugs is the haphazard instillation of atropine in all doubtful cases of eye disease. Less common but equally reprehensible is the practice of instilling a weak solution of atropine into the eyes of patients with central cataract with a view of bringing the periphery of the lens into play and thus improving vision.

THE EXCLUSION OF LIGHT: Gronholm studied the influence of mydriatics and myosis on the tension of the eye and concluded that the filtration channels are opened by the act of accomodation and by contraction of the pupil and suggested that glaucoma patients should be advised to stay as much as possible in bright light, to read as long as their accomodation will allow them to do so and avoid smoked glasses.

FEBRILE DISEASES: Influenza, Herpes Zoster, Opthalmias, etc., have been reported by numerous writers as presenting a casual relation to glaucoma. It is also well known that injuries to the head and eye, sometimes only slight, have seemed to precipitate an attack of glaucoma.

DIAGNOSIS: We shall attempt to describe the clinical picture of the two types, simple or non-congestive and congestive glaucoma. The radical distinction between the two states lies in the fact that in the simple cases the changes which bring about the rise in tension have been slowly developed, that is, the ocular blood vessels have had time to adapt themselves to their new environment; whereas in the congestive type the reverse is true. In simple glaucoma the onset is gradual, no congestion, no pain, no troublesome headaches, rainbows or mists. The pupil may be dilated but often is of normal size. The iris reacts sluggishly and there are three signs that may be said to be invariably present; cupping of the optic disc, diminution of normal visual acuity and limitation of the peripheral visual fields, sometimes alluded to as tubular fields.

Last, but certainly not least, an increase in tension is the outward and palpable sign of increase in intra-ocular pressure. And though an individual reading of the tonometer may sometimes show no rise in tension, yet if repeated readings are made one will eventually find an increase in tension.

In connection with this differentiation of the two types it should be said that an attack of non-congestive glaucoma may pass at any time into a congestive phase and vice versa, a case may at the close of a congestive attack lapse back into the simple form.

THE CLINICAL COURSE OF A PRIMARY CONGESTIVE GLAUCOMA may begin without previous warning, more often it is heralded by some of the so-called prodromata. For months or years the patient may have noticed that his vision was misty perhaps for only a few minutes to a few hours after which it would clear. There has been some degree of pain in the eye and headache, apt to be lateralized to the affected side, together with rainbow rings about bright lights viewed in the dark. Some patients complain of observing flashes of light in front of the eyes. Sometimes these take the form of summer lightning flashes and still other times they are compared to dancing fireflies.

The pupil of the affected eye is dilated, cornea steamy and anterior chamber shallow. The attacks may be usually traced to bodily exhaustion, sleeplessness or mental worry. The attacks are noticed on awaking and wear off as the day advances, or may come on as fatigue deepens in the late afternoon and evening.

A not uncommon symptom which sends the patient to the physician is a sudden increase in presbyopia. This comes in the wake of the attacks and may persist after their disappearance. These constitute the symptoms of early glaucoma.

Sooner or later the early condition passes into the phase of established glaucoma. This change is apt to be gradual, the signs and symptoms of the early stage becoming more pronounced; or the new phase may be ushered in by a crisis of such severity that the patient regards it as the date of onset of the glaucoma. The leading symptoms are severe trigeminal neuralgia usually referred to the eye and forehead, may be so severe as to cause nausea and vomiting and often mistaken for bilious attacks; rapid fall of vision, constriction of the visual field. At the same time the eye is congested; the lids may be swollen and edematous; the cornea steamy; the pupil widely dilated, often irregularly oval in outline with the long axis in the vertical meridian. The iris appears to be discolored and presents a greenish hue though this effect is due in part to the fact that it is seen through the steamy cornea and cloudy anterior chamber. The eye is extremely tender to the touch and under gentle palpation it is felt to be hard. After a variable period measured at times by hours, at others by days, the attack passes off, but the eye is never the same again. It has been permanently though perhaps only slightly damaged.

In the interval between attacks the cornea may clear but readily clouds over; it is usually markedly anaesthetic. The pupil may remain dilated and the iris sluggish. In the absence of congestion its color verges toward grey and atrophic patches may present. Opthalmoscopic examination shows the cupped disc surrounded by a ring of atrophy, the constricted arteries, the congested veins and the vascular pulsation.

Finally we come to the late stage. Following repeated congestive attacks the eye becomes blind. Though patients will maintain that they still see a little even after vision is completely gone.

On examination at this stage one finds the porcelain like bluish white sclera against which the dilated anterior ciliary veins show up in marked contrast forming an irregular circumcorneal anastomotic circle. The iris has almost receded from sight under cover of the overhanging limbus and shows the slate grey tinge of atrophy. The membrane is often reduced to a narrow strip surrounding and framing a wide pupil, while its margin is lined with a black border, the result of an eversion of its posterior pigment layer. The green reflex, the stone hard feel of the eye, the deeply cupped nerve head complete the picture.

Of the subjective symptoms I want to speak very briefly of the mists and halos or rainbow rings around lights seen in the dark. They are often among the earliest symptoms to attract the patient's attention. The mists and halos arise from diffraction of light passing through the mediae of the eye. The true halos around lights are best seen by the patient when he looks from a distance at a bright light in the dark, say for instance, a candle flame or the bulb of an electric opthalmoscope viewed at a distance of 10 ft. in a dark room. Two colors, at least, are usually described, an inner blue or violet and outer yellow, yellowish red or red. Sometimes a greenish yellow band is seen between the two. It is said that the red hues predominate around a candle or gas flame and the blue around the electric light. The size of the halos varies from six to eleven degrees measuring to the outer margin of the red ring. The angular diameter of the physiological halos is seven degrees. The rings or halos seen through a steamed glass plate correspond closely in size with those seen by the glaucomatous eye.

Some of the conditions which may be wrongly interpreted by the introspective patient as glaucomatous halos are:

1. The golden luminous haze made up of radiant beams about a street arc light, or around lights in a store room seen through steamy windows.
2. Scintillating scotomata of migraine.
3. Colored rings seen by nervous patients when they close their eyes in the dark especially after a hard day's work.
4. Rings seen by patients whose corneae have been clouded by local applications of caustic medicines or by catarrhal muco-purulent secretions.

THE VISUAL FIELD IN GLAUCOMA: Perimetric studies show the nasal field is first affected. Later the whole peripheral field shows a tendency to uniform concentric contraction. A large percentage show the sign as Ronne's step. The color fields are at first unaffected but later show a contraction comparable to that of the white field.

Bjerrum(17) in 1890 with a 1 mm object at 2 meters distance worked out a defect of visual field which he considered strongly suggestive of glaucoma. It consisted of an arcuate or annular scotoma which started at the blind spot and swept around either above or below the central area of fixation or both. The essential feature of this scotoma in the central zone is that it is continuous with the normal blind spot.

Ronne(18), a student of Bjerrum's, carried the latter's work still further and noted in certain cases a sharp horizontal limitation to the defect in the nasal field.

Seidel(19), another pupil of Bjerrum's, found that very early in glaucoma a characteristic change can be found in the blind spot; this consists of wing-like extensions of the spot either upwards or downwards or in both directions. These small scotomata present a curved contour whose concavity always faces the fixation point. They are smaller than those of Bjerrum and are from the first continuous with the blind spot.

SUMMARY

By this study of glaucoma from the angle of etiology, pathology and diagnosis we have hoped to gain and possibly disseminate a more thorough and accurate ability to recognize this disease. Glaucoma is not difficult to diagnose, yet it is overlooked and mistreated ever and anon by general practitioners and specialists alike.

BIBLIOGRAPHY

1. Priestly Smith. Amer. Encyc. Oph. V. VII, p. 5404.

6. Risley, S. D. The Ophthalmoscope, 1914, V. XII, p. 83.

8. LaGrange, Henri. Presse Med. Paris, 32-300, April 5th, 1921.

9. Sanderson, D. D. Nebr. State Medical Journal, 9-322, August, 1922.

10. Kagoshima. Ophthalmology, July, 1916. p. 191.

12. Fuchs, Ernst, Ophthalmology, 4th Ed. p. 472.

17. Bjerrum. Tenth International Medical Congress, Berlin, 1890.

For other references see Elliott's Treatise on Glaucoma, Ed. 1922, or American Encyclopedia Ophthalmology, Vol. VII.

2. Magitot, p. 55.
3. Schnabel, p. 90.
4. VonGraefe, p. 91.
5. Holth, p. 91.
7. Hertel, p. 130.
11. Priestly Smith, p. 130.
15. Hoag, p. 138.
16. Elliott, p. 140.
18. Roenne, p. 267.
19. Seidl, p. 268.

TEN WAYS TO KILL A MEDICAL SOCIETY

Don't go to the meetings.

If you do go, go late.

If the weather doesn't suit you, don't think of going.

If you do attend a meeting, find fault with the work of the officers and members.

Never accept an office, as it is easier to criticize than to do things.

Get sore if you are not appointed on committees; but, if you are, do not attend meetings.

If asked by the chairman to give your opinion on some matter, tell him you have nothing to say. After the meeting, tell everyone how things should be done.

Do nothing more than absolutely necessary; but, when members use their ability to help matters along, howl that the institution is run by a clique.

Hold back your dues, or don't pay at all.

Don't bother about getting new members. "Let George do it."

PHYSIOLOGIC EFFECT OF MASSAGE

In connection with a study made by Ralph Pemberton, F. A. Cajori and C. Y. Crouter, Philadelphia (Journal A. M. A., No. 29, 1924), of arthritis and rheumatoid conditions, analysis has been attempted of some of the measures known to benefit them. Conspicuous among these measures are exercise, the application of external heat and massage. Studies were, therefore, undertaken on five arthritic patients, sufficiently active and robust to permit of general and severe massage, in respect to the hydrogen-ion concentration, carbon dioxid content, oxygen content, oxygen capacity, percentage oxygen saturation, inorganic phosphorus and lactic acid of the venous blood before and after massage, and also the hourly volume, hydrogen-ion concentration, titratable acid, organic acids and inorganic phosphorus of the urine before and after massage. It is to be noted that massage of voluntary muscles, even though vigorous, is not accompanied by the evidences of lactic acid production and acidosis, which accompany relatively mild active exercise of short duration, or by the evidences of loss of acid and alkalosis, which follow exposure of the body to external heat. Massage can be used as a partial substitute for active exercise in many conditions, but its benefit must be due chiefly to some mechanism other than that reflected in the chemical changes accompanying exercise. The available evidence suggests that these benefits are referable to changes in the circulation, especially capillary. The favorable influences on the rheumatic syndrome of exposure to external heat, massage and active exercise apparently find their chief explanation in their influence on the circulation, including the capillary beds. The corollary to this is that a disturbance of the circulation constitutes part of the underlying pathologic change in rheumatic and arthritic conditions.

A PRACTICAL DANGER IN THE USE OF INSULIN BY THE PATIENT AT HOME

When insulin was first introduced, Robert S. Berghoff, Chicago (Journal A. M. A., Oct. 25, 1924), recalls, it was deemed advisable that its administration be begun with the patient under hospital supervision. When insulin therapy is prolonged indefinitely, its administration by the patient himself becomes necessary. We have felt safe in assuring our patients who possess urine sugar in appreciable amount that its entire absence on a given diet and set insulin dosage bespeaks a corresponding satisfactory blood sugar level, and calls for at least a temporary cessation of insulin therapy. In fact, we had almost accredited insulin with a gradual resumption of carbohydrate tolerance. However, at first sporadically, and of late, regularly, we have been impressed with the undeniable fact that after a more or less continued course of insulin the blood sugar threshold rises appreciably. This rise of the blood sugar threshold is of significant importance to the patient, robbing him of his only check, and lulling him into a sense of false security. If, for example, before the initial use of insulin, a patient's blood sugar threshold is determined at from 0.120 to 0.150, at which point sugar appears in the urine, it has been our common observation that the use of insulin soon raises those figures materially, in some instances more than 0.50 point. The practical significance is obvious. If patients are to be entrusted with the home use of insulin, a rough check on their status is essential. A daily blood sugar test is not practical. In the past, we relied on a daily urine sugar estimation to afford that information. In view of the recent gross discrepancies, however, between blood and urine sugar levels, that would seem unsatisfactory.

TRYPARSAMIDE IN THE TREATMENT OF NEUROSYPHILIS

Udo J. Wile and Lester M. Wieder, Ann Arbor, Mich. (Journal A. M. A., Dec. 6, 1924), attempted to determine the value of tryparsamide in the treatment of neurosyphilis, as well as to determine the toxicity and the untoward reactions of the drug, if such existed. Fifty cases of cerebrospinal syphilis were utilized. In the neighborhood of 325 injections were given to these patients. The fifty cases allow of the following differential clinical analysis: general paralysis, twenty-one cases; taboparesis, six cases; tabes dorsalis, three cases, and diffuse cerebrospinal syphilis, twenty cases. Tryparsamide showed itself of great service in causing a profound change for clinical betterment in these cases. The type of case found most favorably influenced has been the type in which least might be expected, namely, the parenchymatous type in which a considerable degree of deterioration had apparently occurred. The most striking clinical changes noted have been increase in weight, color and general appearance. In nine cases, a marked improvement of the mental state of the patient has been found coincident with the improvement in the general appearance. In five cases, the treatment was followed by clinical improvement when other forms of therapy, including intraspinal treatment, had failed. This clinical betterment is not paralleled by striking corresponding changes for the better in the spinal fluid. For this reason, it is possible that the improvement characterized by gain in weight and general appearance may be due partly to the effect of the drug on syphilitic foci outside the nervous system, as well as to the tonic effect of the arsenic content of the drug. Gastric crises and the lightning pains of tabes dorsalis have, as yet, not yielded to tryparsamide treatment in this series. It would appear that more treatment of the same type should be given in those cases in which no laboratory response has been noted, on the one hand; and that a greater period of time must elapse, on the other hand, before accepting clinical improvement as definitely evident of the therapeutic activity of the drug. With the exception of vomiting, which followed each injection in one case, in no other case was there the slightest untoward result, either from the standpoint of constitutional reaction or from that of disturbance of vision.

USE OF INDWELLING CATHETER TO INDUCE PASSAGE OF URETERAL STONES

Edwin Beer and Leo J. Hahn, New York (Journal A. M. A., April 4, 1925), call attention once more to a method of which they have made use during the last one and one half years, and which they believe should be used more often in cases of calculi lying in the lower half of the ureter. This method consists simply in passing a catheter beyond the stone and allowing it to remain there for, from two to five days. This procedure may result in the passage of the calculus within a few hours after the withdrawal of the catheter. The mechanism is not clear. Perhaps the edema of the mucous membrane which holds the stone is allowed to subside; perhaps some traction on and dislocation of the stone are caused by withdrawal of the catheter; perhaps dilatation of the ureter is the chief factor. Whatever the mechanism, it has two great advantages over other methods in this category: a single treatment frequently suffices to deliver the stone, and stones are passed with very little pain. The method has been tried in twenty-seven cases in Mount Sinai Hospital and has accomplished the passage of at least ten stones. Of the twenty-seven cases in which it was tried, the diagnosis of stone was very doubtful in one case. Four additional cases were not favorable for the use of this method, the stone being rather large or high up in the ureter. Of the twenty-two cases in which this method might seem to have been indicated, there were ten proved successes, or 45 per cent. Two additional patients almost certainly passed the stone in the hospital, as evidenced by cystoscopic findings before and after; but as the stone was not recovered, these are not included in the ten successes. Two other stones were passed after discharge from the hospital. In other words, out of twenty-two cases, probably fourteen successful deliveries were obtained (60 per cent). The method is simple and apparently without danger. Beer and Hahn have seen no bad results in their cases, although bacteriologic studies have not yet been made. This method is useful only for the small or medium sized stones, particularly those in the lower half of the ureter.

FIFTY-SEVENTH ANNUAL CONVENTION OF THE NEBRASKA STATE MEDICAL ASSOCIATION, LINCOLN, MAY 12-14, 1925.

INVOCATION

Walter Aitken, D. D., St. Paul Methodist Episcopal Church, Lincoln, Nebraska.

"Strong Son of God, Immortal Love,
Whom we that have not seen Thy face,
By faith and faith alone embrace
Being where we can not prove.

"Thine are these orbs of light and shade,
Thou madest life in man and brute,
Thou madest death, and lo, Thy foot
Is on the skull which Thou hast made.

"Our little systems have their day;
They have their day and cease to be;
They are but broken lights of Thee,
And Thou, O Lord, art more than they.'

Because of the consciousness of this great dignity which has been conferred upon the human race, we come into Thy presence today with thanksgiving, thanking Thee for the intelligence, the power of will, and the disposition to be of some service to our fellow men.

We are called in various ways to serve humanity, and often there are discouraging things in our profession as we are dealing with the ills and the woes of humanity. We fear there are times—too many times—when we come in contact with men and fail to radiate that hope and sunshine that only men and women can radiate who have caught the vision of Him who went about among His fellows doing good.

As we come here this afternoon thinking about the problems of the medical profession, we pray for divine wisdom and guidance so that the very best service can be rendered to humanity as a result of our gathering here.

Let Thy blessing be upon the members of this profession in their great and good work. We bid them Godspeed and wish for them the highest and best success, not only for their own advancement, but for the advancement of suffering humanity and of civilization.

We ask in Thy name. Amen.

REPORT OF THE DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

Lincoln, Nebraska, May 12, 1925.

To the House of Delegates, Nebraska Medical Association:

Your delegates, A. D. Dunn and R. W. Fouts attended the session of the House of Delegates of the American Medical Association at Chicago June 19-22, 1924. While much material of interest and of importance to the medical profession at large was discussed and acted upon by the House, time permits only to touch upon a few of the more significant subjects discussed.

The topics of the high cost of nurses' training and of a medical education were presented by President Pusey, elect. The Reference Committee did not report on the problem of nurses' training, but discussed freely and reported against the desirability of any reduction of the present educational requirements; that the provision of inferior doctors for small communities would not solve the problem. The report of the Reference Committee was freely discussed and adopted by the House.

It was reported that six State Associations had employed full time secretaries; Ohio, Texas, Wisconsin, California, Missouri and Virginia, and those states were convinced of the value to the medical profession of full time secretaries. The promotion of councilor district societies was advocated as being worthy of consideration by all of the constituent state associations.

Appropriate actions were taken to relieve the medical profession of the war time narcotic tax, a thing which is adding an unjust burden to the practice of medicine.

A movement was launched to get relief from the unjust discrimination of the Federal Income Tax such as the disallowance of traveling expenses to and from medical meetings and post-graduate expenses in computing Federal Income Taxes.

Action was taken against the administration of the Veterans' Bureau on the following counts:

1. Training of chiropractors. It was shown that 71 war veterans were in the process of manufacture into chiropractors at government expense. In as much as no vocational training shall be granted to any person after June 30, 1926, this waste of government funds will gradually diminish.

2. The World War Veterans' Act, 1924, section 201, paragraph 10, authorizes the director of the Veteran's Bureau "so far as he shall find the existing government facilities permit, to furnish hospitalization and necessary traveling expenses to veterans of any war, military occupation, or military expedition since 1897, not dishonorably discharged, without regard to the nature or origin of their disabilities: Provided, That preference to admission to any government hospital for hospitalization under the provisions of this subdivision shall be given to those veterans who are financially unable to pay for hospitalization and their necessary traveling expenses". This permits any World War Veteran, irrespective of financial position or social standing to obtain free medical care at Government expense, although the Government would not think of protecting the same people from hunger, cold or exposure. The Government has entered into competition with the medical profession, yet it has not entered into the subsidized competition with the grocer, the coal man, the dealer in men's furnishings and the landlord. The situation may almost be stigmatized as communistic medicine in its most militant form, endeavoring to edge its way into American life under the cloak of patriotism. Action will probably be taken in this matter at the next session.

The following definitions by the Judicial Council are of interest:

"A 'sectarian' as applied to medicine, is one who in his practice follows a dogma, tenet or principle based on the authority of its promulgator to the exclusion of demonstration and experience".

"A physician is one who has acquired a contemporary education in the fundamental and special sciences, comprehended in the general term "medicine" used in its unrestricted sense, and who has received the degree of Doctor of Medicine from a medical school of recognized standing".

The following supplementary report of the Judicial Council seems to your delegates worthy of presentation in full to the House, and of publication in the State Medical Journal at the discretion of the House and the Editor:

"Dr. M. L. Harris, Chairman, presented the following supplementary report of the Judicial Council:

"To the Members of the House of Delegates of The American Medical Association:

"The medical profession is confronted today with one of the most important and serious problems that it has been called on to meet. Briefly, and in business parlance, the question is: Shall the medical profession vend its products directly to the consumer or shall it sell them to a middleman or third party? This question comes to the attention of the Judicial Council by reason of the extensive propaganda that is being waged at the present time in regard to periodic health examinations. The American Medical Association has gone on record through this House of Delegates favoring periodic examinations, and this Council concurs in the desirability of such examinations being made. At the last meeting of the House of Delegates, however, the question now raised was not considered. Since then a number of commercial organizations have entered the field and, as middlemen, or jobbers, are offering to furnish periodic medical examinations to the public generally for a stated sum per annum and to send reports of the findings at the examination to the examined; and some of these organizations are giving advice to the examined as to what they should do for the conditions found. These examinations, of course, can be made only by physicians; hence, these companies are signing up contracts with physicians throughout the country to make examinations of all persons sent to them by the particular company holding the contract, and to forward the reports directly to the company.

THE INDEPENDENCE OF THE PHYSICIAN

"For these examinations, the company pays the physician a definite price and then sells the results of the examination to the individual examined at a much higher price. In other words, these companies acting as jobbers buy the physician's services at one price and sell them to the public at another. The questions that should receive the most serious and earnest consideration of this House of Delegates are: Should the physician deal with the jobber, or should he sell his services directly to the consumer? and, what is going to be the ultimate effect on the independence and the welfare of the physician as a result of thus dealing through a jobber, or middleman?

"When a physician signs a contract with a commercial organization to make physical examinations of all persons sent to him by the organization for a price set by the organization, and allows that organization to make its own charge to the individuals examined for the services rendered by the physician, the physician is selling his independence to the jobber. One of the largest jobbers in this line buys the services of the physician for $5 and sells it to the individual for $20 or $25. It is the knowledge of the physician that gives value to the services, and this value is not enhanced or increased any by passing through the jobber's hands.

SOME FINANCIAL FIGURES

"One of the arguments advanced by institutions of the kind in question is that they are doing a great public service in their propaganda for periodic medical examinations, or as they sometimes call it, preclinical medicine, and that their work, therefore, is largely altruistic and philanthropic. We will not attempt to argue the question of the value of periodic physical examinations, as that is not in issue at this time; but some attention may be directed very profitably to the claims of altruism and philanthropy. One of the institutions already in the field, a stock corporation organized for profit, was capitalized for $200,000 preferred stock, and three shares of common stock were issued for each share of preferred. The preferred stock was increased to $236,000 paid in, and recently a preferred stock dividend of $90,000 was paid, but no common stock was issued with it. The authorized capital stock is now $400,000 preferred stock, of which some $326,000 is outstanding. The amount of common stock outstanding is $689,100 or a total of $1,015,100. During the year 1923 the earnings of this company were $611,146.93, and the profits $55,217.96. During the three months of November and December, 1923, and January, 1924, the operating profits were $4,007.67, $6,176.29 and $6,932.91, respectively, each month showing a material increase over the previous month. At this rate the profits for the year would amount to approximately $70,000, or 21 per cent on the preferred stock outstanding or 30 per cent on the actual money paid in. During the same three months the work done in the roentgen-ray laboratory alone amounted to $35,881.20, which is at the rate of $143,524 a year.

"It is said that two-thirds of the oustanding common stock has been trusteed and that the dividends, if any, on this trusteed common stock are to be applied to public health work. As no dividends have been paid on the common stock, no public health work has been done by the trustees holding the trusteed stock. In addition to the individual examinations made, this company has contracts with thirty-nine old line insurance companies to furnish them with reports on all examinations made of their policyholders. It also contracts with individual plants to make examinations of all of their employees. The company pays the physician only $2.50 for examinations made of all policyholders in insurance companies with which it has contracts, and then sells the information which it receives from the physician to the insurance company for $5. The examinations of employees of industrial plants are made by physicians sent directly from the home office of the company and not by the local physicians.

WHAT IS BEST FOR THE PUBLIC?

"In view of the fact that this company is a stock company organized for profit, that it has paid a large stock dividend, and that its earnings are now increasing annually, its claims to altruism and public benefaction are proper subjects for investigation and analysis. It is further claimed by this institution that the work which it is doing is of great value to the physician, at least to those physicians who have signed contracts to market their products through the company. In a recent letter from this company, it is stated: 'It must be conceded that we are giving a powerful impulse to the development of the general practitioner, not only in the matter of encouraging the people to consult him but in stimulating him to broaden his diagnostic work and adjust himself to this ever-increasing public demand for preclinical service.' There are several things stated in this sentence which deserve attention. It is stated that 'it must be conceded that we (the institution) are giving a powerful impulse to the development of the general practitioner'. Is it conceded by the profession that it was necessary for a commercial institution to enter the field of medicine to buy and sell the product of the physician's brains in order to stimulate the development of the physician? Is it conceded that making examinations for a commercial organization for $5 each, which the company immediately sells to the examined for four times that amount, is a powerful impulse to the development of the physician's ability? Does it stimulate the diagnostic work of the physician to have that work bought by a jobber at one price and immediately resold to the consumer at a much higher price? Is there such a revolution taking place in the practice of medicine by its commercialization by stock companies, organized for profit, that it is necessary for the physician to readjust himself to the new order of things? If these things are true, it is certainly time for the profession to rouse itself from its slumber of inertia before it is shorn of its strength by the Delilah of commercialism. This is not a case of the good of the public versus the good of the profession. If it were, there would be no question at issue, for the profession always has and always will yield its own interests to that of the public good; but it is a case in which the public good can be best served only by what is best for the profession.

EIGHT THOUSAND EXAMINERS FOR ONE COMPANY

"One of these institutions claims to have 8,000 physicians on its list of examiners. That so many medical men have been induced to consent to give their services for a small remuneration to a company to resell to the individual can be understood only by assuming that they failed to analyze the situation and to comprehend its significance. And this brings us to the question of what is going to be the effect on the independence and the welfare of the physician of thus dealing with a jobber. It should be remembered that all reports are sent directly to the home office, the examiner keeping no copy of them, and having no records of the cases examined. Furthermore, the examination made by the physician is not complete in that one of the most important elements of the examination is not made by him; namely, an examination of the urine. When the person to be examined receives notice to present himself to the physician for examination, he also receives a container with instructions to fill it with his urine and mail it at once directly to the home office. It might appear from this that the home office, while having confidence in the local physician's ability to make an examination of the blood, heart, lungs, eyes, nervous system, etc., thought him incompetent to make an ordinary examination of the urine. To us, however, it has a deeper significance. If there is one thing that the laity has been led to believe, it is the value of an occasional urinalysis. The home office, therefore, has the individual send a specimen of urine at stated intervals for reexamination. As these specimens do not pass through the hands of the local physician, the only place where the individual can obtain information concerning his condition is from the home office. The individual thus becomes, as it were, tied to the home office. It is evident that in time the home office and it alone will be in possession of full information of the physical condition of a very large number of individuals which will be of very great value to it. This is already shown by the fact that thirty-nine insurance companies have contracted to pay $5 apiece for information concerning its policyholders. It requires no stretch of the imagination to see insurance companies obtaining in this way information concerning the physical condition of nonpolicyholders with a view to soliciting insurance without necessity of further medical examination. Corporations, business firms and others may likewise apply to the home office for information concerning the physical condition of employees, business associates, and others, and without going into further detail it is easy to see many ways in which the accumulated information may be of great pecuniary value to the home office, with corresponding loss to the medical profession.

THE INTEREST OF THE PATIENT AND THE ENCOURAGEMENT OF MEDICAL PROGRESS

"Individualism in the practice of medicine is essential to success if one has in mind the interest of the patient and the encouragement of medical progress; but we should distinguish very clearly between those things which are of purely individual concern and those which concern the welfare of the profession as a whole. In the one case, the problem may safely be left to each one to work out for himself; while, in the other, cooperation and collective effort are absolutely indispensable to self-preservation. The relation between the patient and the physician is an individual matter, and anything that disturbs this relationship is detrimental to the best interest of the patient. We cannot help but feel that the service of periodic health examinations, as conducted by commercial institutions, must inevitably result in the undermining of the confidence of the people in the ability of the practitioner. While these examinations are made by local physicians to whom the individuals are sent by the home office, it is made clear to them that it is necessary for the home office to complete the examinations by making the urinalyses, and, furthermore, it is impressed on them that the home office alone is competent to interpret the findings of the physician's making the examinations and to report to the examined. This is well shown by the fact that, in the blank which the individual himself is to fill out, space is left for the following: "Any question you may wish to ask regarding your health" and again: "Give address to which all reports are to be sent". From the foregoing it is perfectly evident that the person examined is led to believe that the physician making the examination is not competent to answer any questions regarding his health, and that all communications on the subject should be addressed to the home office.

"While it is true that periodical health examinations are often of value and are to be recommended in a general way, we are inclined to regard the indiscriminate communication of the results of such examinations to the examined in the form of the statements that are commonly made by these organizations as unwise and often injurious to the individual who applies for examination.

"The communication of the results of physical examination and the general advice with which it should be associated, the preparation of a written statement if it be desired by the patient, these may be among the most delicate questions arising in the relations of physician and patient, questions on which the future happiness and usefulness of the patient may depend — vital problems in the art of medicine.

"These are problems with which only the individual physician can deal.

"No organization is medically qualified or, in our opinion, justified in issuing to individuals applying for examination a routine statement of the results of the examination.

WHAT WILL THE NEXT STEP BE?

"While the institution claims that it does not advise the patient as to treatment but refers him to his physician or to the examiner for any treatment which the home office may think necessary, it does advise as to diet, exercise and hygienic measures, which, however, are held not to constitute treatment. It is but a short step from what is now being done to what may be done in the way of treatment; and while it is denied that the institution intends to treat patients, we believe that it is not unfair to assume that the idea is not entirely foreign to the medical director of one of these institutions, for in a letter recently received from him se said: 'I am sure from my own knowledge of the situation that the public will not receive kindly any action on the part of the organized medical profession reflecting an undiscriminating condemnation of all efforts to render hygienic and medical service to the public aside from that rendered by the general practitioner'. It is not difficult to see in this statement a veiled threat directed against this organization, as well as a gentle hint that medical service in this connection can mean nothing but treatment of the sick. Institutions of the kind under discussion are almost certain to drift into treatments to certain patients who applied to them for laboratory examinations.

"We believe that enough has been said to show the importance of the subject, and feel that it is incumbent on this body to devise ways and means of setting the public aright on the question of periodic health examinations, and to convince the people that the proper person to make such examinations and to give advice relative thereto is the family physician, aided, when necessary, by local specialists".

(Signed): A. D. Dunn,
R. W. Fouts.

REPORT OF THE COMMITTEE ON PUBLIC ACTIVITIES

The committee on Public Activities was originally the committee on Publicity. The present committee's duties are to inform the public of what the practice of so called regular medicine has and is endeavoring to accomplish relative to the benefit of mankind. The duties of this committee are in no way or manner to convey to the public anything for the benefit of the medical profession. The keeping of the position of the profession as secondary to the benefits to be given the public was the problem ever present before this committee which made its duties far more difficult than it appears. The great accurate and inaccurate publicity given, nowadays, to almost every walk of life, including particularly irregular healers, places the profession of medicine, if it still desires to retain its role of altruism, in a position wherein any publicity it enacts must be easily and thoroughly understood by the public as solely for the latter's benefit. Publicity to the layman generally means advertisement and the present day editors of newspapers and magazines are so business-like in everything they publish that any endeavor toward enlightment or altruistic publicity is something they look upon with suspicion. A publicity campaign carried on by the Douglas County Medical Society, which was mostly for the benefit of the public was soon smothered by a concerted action of one of the cults; demonstrating beyond all doubt the position of the medical profession is in when it comes to altruistic or any kind of publicity.

With these ideas in mind the committee held six meetings during the past year with the past and present presidents of the State Society. The difficulty of obtaining a full attendance was due to the fact that the members lived so far apart. In adding the yearly new members to this committee it is here suggested that they be chosen in a convenient proximity to the majority.

We were well aware of the fact that some members of the Society claimed that the committee had done very little, their idea being that the committee during its first year of study should have plunged headlong into any sort of publicity just so that it was publicity.

Since the time of Hippocrates the better element in medicine has always shunned publicity and there is no present reason why it should now change that attitude. Committees will never be able to give this subject its due time and consideration and we here most strongly recommend a field secretary on a very good salary who can spend all of his time giving the proper and impartial medical news to the public, and at the same time protect the profession. The profession is so disorganized and inert as a functioning body that it has reached the stage where it needs protection.

Knowing that the most efficient and impartial publicity of medicine was being carried on by well paid experts under the tutelage of the American Medical Association in Chicago, the Nebraska Committee decided to work in conjunction with it by getting various publications in Nebraska to publish the Clip sheets from Hygiea. We realized that we were not working for Nebraska medicine alone but we realized that the form of publicity advocated by the A. M. A. was considered proper and that it could only be of benefit to the medical profession no matter in which state it resided.

The appended publications are in communication with the Nebraska Committe on Public Activities and nearly all have agreed to accept the Clip sheets from Hygiea. The radio broadcasting station in Omaha is also sending out announcements which have been passed upon by the proper authorities in the American Medical Association. In a very short time fully ten million people will have been reached by the activities of this committe. Owing to the fact that publicity has become a panacea, that the profession of medicine is misunderstood and misrepresented, at the same time realizing that it has ever too many shortcoming we recommend to the society that the dues for membership be raised to such an extent that at least $10,000 per year can be applied through a special agent whose duties will be that of bringing about an acquaintanceship on the part of the public of what the profession of medicine needs and what it is attempting to accomplish, furthermore, that this committee shall continue to function along conservative lines and to advise with any new and full time agent before the latter acts.

C. A. Roeder, Chairman.

PUBLICATIONS:

Western Newspaper Union.
American Old Line Ins. Co., Lincoln.
Bankers Life Ins. Co., Lincoln.
Bankers Reserve Life Ins. Co., Omaha.
Columbia Life Ins. Co., Omaha.
Elkhorn Life & Accident Ins. Co., Norfolk.
Equity Life Ins. Co., Omaha.
Lincoln Life Ins. Co., Lincoln.
Lincoln Liberty Life Ins. Co., Lincoln.
Midwest Life Ins. Co., Lincoln.
Northwestern Life Ins. Co., Omaha.
Old Line Ins. Co., Lincoln.
Omaha Life Ins. Co., Omaha.
Prairie Life Ins. Co., Omaha.
Security Mutual Ins. Co., Lincoln.
Nebraska Telephone Co., Omaha.
W.O.A.W. Broadcesting Station, Omaha.

REPORT OF THE NEBRASKA STATE MEDICAL ASSOCIATION DELEGATE TO THE ANNUAL CONVENTION ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

The congress referred to in the above title, occurred in Chicago, March 9-12, 1925. It is the third such I have attended as your delegate. I am more and more convinced of the value of these constructive meetings, and I have increasing regrets that so few of the profession ever see, hear or know of the proceedings. Life many good things, the harvest of fruits is vastly cut down because the seed available never lands on soil.

Naturally these meetings are not planned for a large attendance from the practicing profession. It is the planned policy of councils assembled in a congress, to be composed of certain selected ones who intensely concern themselves with different problems and to hand back their deductions to the general American Medical Association. Therefore, your delegate here sees assembled the master minds of America on Medical Education and Hospitals, as well as the leaders of the Federation of State Boards for Licensure and Public Health work. It is a different crowd than seen at the June meeting of the American Medical Association. It is smaller. The environment — the professional atmosphere is different. You soon learn to sense a "teacher characteristic" about the assembly. The program is not clinical in kind. No scientific papers on phases of different diseases are presented. Its labors are concerned with the method of making future doctors; with the correct government of the practice of medicine by doctors in various communities; with public health problems; with standard methods, and kinds of hospitals, and all of this in a co-ordinated way with co-operation.

This year the work of the congress might be classified under six headings.

1. The last twenty-five years' progress in Medical Education, including all branches — medicine, surgery and operation; teaching and research; the Army, Navy and Public Health Departments of the government.
2. Medical service in Rural Communities.
3. Essentials of adequate examination for licensure.
4. Essential principles of a Medical Practice Act.
5. Deliberation on phases of modern hospital service.
6. The medical and health education of the public.

I. Twenty-five Years' Progress in Medical Education:

A great reorganization in medical education has occurred in this period. Medical education has been standardized. It has now just about reached a par with that of other civilized countries of the world. We now have eighty medical schools with splendid standards. In 1904 we had one hundred sixty, many with the poorest of standards. Then, twenty-eight thousand plus students. Now seventeen thousand plus, with twelve thousand the lowest ebb in 1919. This was due to the war. The rate of increase since 1919 warrants the prediction that in a few years we will reach the 1904 number. The population in the meantime has increased thirty million, and still advances one and one-half million per year. Then the average number of doctors per one hundred thousand people was thirty-seven. Now it is sixteen. Then 176 medical students per school. Now 222. This increases the teaching load per school 26 per cent, and ways and means were considered to handle this without decreasing efficiency or excessive increase in cost. It is estimated that twenty-five million dollars are now being spent on buildings and physical equipment directly concerned with medical education including hospitals and medical schools. The full time use of laboratories, the use of more associate and assistant professors and the all year medical school session on a four quarters basis, were some of the suggestions.

John M. Dodson, while talking on the subject of entrance requirements, grading and promotion of students by deans, stressed the importance of moral character and stamina. He contrasted it with intelligence, per se, and gave preference to character. Dean Dodson's long experience at Rush gives weight to opinion, and we heed when he says character proves to be the highest of assets in the mature years and influences of a doctor.

Another question raised by Dodson was, "Are all worthy candidates for medical education, poor as well as rich, finding admission possible?" He answered this in the affirmative. He estimated that the ratio of medical students working their way through school today, compared favorably with that of previous periods.

Much was also said about methods of teaching medicine, surgery and the specialties, as well as the fundamental sciences. In general the tendency is away from the purely descriptive toward the functional aspect. Attention was called to the fact that medical progress during the closing twenty-five years of the last century was largely along bacteriological lines, and that the first twenty-five years of this century have been essentially along biochemical lines. It is further interesting to note that both of these are sons of the great Pasteur and that bio-chemistry was the older but was rapidly outgrown by bacteriology because of the ease of its development.

The importance of biochemistry today serves as an excellent illustration of why the medical graduate of twenty or twenty-five years ago should have had a thorough training in the fundamental sciences, such as chemistry and physiology. If he did not have, a thorough understanding of most biochemistry as practiced today is for him absolutely impossible. Hence, today the idea of cutting down standards of medical school entrance, as recommended by Pusey, president of the American Medical Association, are unthinkable. Why? Because it is more than fair to believe that the next twenty-five years will show even greater development in medical education, and the present medical student who is to be the doctor of that day will then be illy prepared to function then, if requirements are now lowered. The congress by no means agreed with Dr. Pusey.

II. Medical Service in Rural Communities:

Pusey's reasons for advocating reducing the matriculation requirement, and the required hours on the medical student's curriculum, are several. He knows that many rural communities are without doctors. He feels the medical schools are making too few general practitioners and too many specialists. The medical school curriculum is so full of required hours that the initiative of the student is blighted, and that as good or better general practitioners can be made in shorter time. Already the final graduation time of the average medical man is late in his life compared to many other callings. He offers this plan, therefore, to supply the needs of the rural districts, which are growing with increasing demand. The Congress offered certain statistics showing how the war had taken many doctors from rural regions, and once away they felt it their opportunity to go to larger places. Further, the farmer had fared poorly — more poorly than other industries, and the doctor had followed the dollar, just as any business man would have done. The automobile had played some part in the doctor's removal from small rural communities, inasmuch as it had increased the scope of the doctors' territory. Likewise, it took many patients to neighboring cities and larger towns. Other statistics were offered to show that the cities are being overstocked with doctors and that soon the smaller communities will offer better and quicker financial return, the logical conclusion being that the difficulty would settle itself on an economic basis, later. In any event, the Congress was very adverse to lowering standards as the Pusey recommendation advocated.

The president of the Nebraska State Medical Association has some interesting statistics in this line for the state of Nebraska. They are up to the hour.

III. Essentials of Adequate Examination for License:

In general the view held by the various state board men was that these examinations be both written and practical. That the federation of examiners should cooperate with the medical educators of medical schools and hospitals to the end and that their views should be co-related. A testing of the mental and intellectual ability was far superior to a testing of memory. All examiners should remember they were examining general practitioners, and not specialists.

IV. Essential Principles of a Medical Practice Act:

This subject was a part of the program put on by the federation of state medical boards, and really not a part to which I was your delegate. In brief, the discussion of the functions of a medical practice act and its enforcement, were foremost topics of the discussion.

V. Phases of Modern Hospital Service:

This year standards were little discussed. These seem now fairly fixed, with so much still to be done by most hospitals that several years may elapse before we reach as individual hospitals, the nearest approach to the ideal. The expense per hospital day has so increased that obligatory economy is ever a retarding factor.

Of the five hundred new hospitals in the last five years, the ratio of open to closed staff is two to one. The ratio for 1924 was 83:16, or seven to one. The big argument in favor of the open hospital is, it extends its teaching forces to the larger number of doctors as well as its care to their patients, which is a very large ratio. Only three per cent of all doctors go away each year for any form of post graduate work. Only eleven per cent ever go. Therefore, every doctor practicing in a hospital reasonably standardized has a teaching force at his command which provides a fair post graduate work if he avails himself of it. In New York City 36.8 per cent of the doctors are on some hospital staff. In Chicago 24.2 per cent. In New Jersey state, 29 per cent. In Wyoming, 17 per cent. This is a point well worth consideration by every medical man in Nebraska who can avail himself of a hospital environment. Likewise it is highly essential from the hospital viewpoint to make the standards of its institution high.

The big argument in favor of the closed hospital lies in its better organization. There is better management of staff, internes, nurses, and laboratories. There is better team work, more cooperation, greater fullness in use of physical agencies. Research work is possible. Statistics based on better records, more reliable. This trains nurses and interns to be more expert. It offers post graduate work of higher type. It is a better teaching hospital for medical students et cetera, but with all this it accommodates fewer doctors and relatively few patients.

VI. The Medical and Health Education of the Public:

To your delegate, this was a most interesting session. For several years every forward looking medical mind has felt the medical profession lacked the method or ability to say the understandable thing to the laity. The public seems less in accord with scientific medicine than cultisms. This is, indeed, an important question. At this meeting the analysis of how to get medical and health education over to the public was encouraging. It included such means as Bulletins of a catchy advertising character, issued by health commissioners; such means as newspaper medical stories being always censored by a qualified medical committee appointed by County medical societies. Radio health and personal hygiene talks given by recognized authorities in a brief co-ordinated manner, with the appeal to the lust carefully avoided, were suggested. It further included health expositions and exhibits put on by medical schools, hospitals, etc. O'Brien of the University of Minnesota reviewed how they carefully studied the psychology of selling the problem in health to the public mind. It was best done by something to exhibit which was striking in character and had an outstanding relationship to a health problem. For example, a human brain showing a cerebral hemorrhage and a placard stating "This man died of a stroke." Associated with this exhibit was a medical student or someone qualified, who took the blood pressure of volunteers in the crowd and at the same time made a snappy short talk on early detection of arterio-sclerosis and its causes. Cancer, tuberculosis, infant feeding problems, etc., etc., were handled in the same way.

Bundeson, the health commissioner of Chicago, related an interesting experience in relation to the importance of the use of milk as a food. For years he had tried to get Chicago enthused on this subject and yet the dairymen noticed no increase in milk consumption. One day ten tons of spoiled milk had to be disposed of, and it could not go into the sewers. The stuff was in the way. It was worse than a total loss. The dairyman agreed willingly to give it to Dr. Bundeson. He conceived the idea of the following advertising experiment. The spoiled milk was reduced to a solid and made into bricketts. A locomotive and train of cars was borrowed and one hundred orphans were taken on a twenty-five mile free excursion ride with the locomotive burning only milk. On this evidence of power or energy stored in milk, he built his catchy story which the newspapers gladly broadcasted everywhere free of charge, and he later repeated it by bulletins, and hundreds of thousands of people increased to their lasting benefit, their consumption of milk.

Still another means of getting health education to the public was by means of periodic examinations of the apparently healthy. Numerous insurance companies are availing themselves of this and proportionately increasing their dividends. Expense attached prevents this means reaching any considerable proportion of the people, however.

My Recommendations:

As I said in the beginning of this report, these meetings are thoroughly worth while, and whether you send a delegate to sit in on them or not, your members will continue to profit by them in that they help plan for better medical education of students, better hospitals and the education of staff doctors, internes, nurses, patients and the public through these hospital environments, etc.

The weakness of the direct help to you by these congresses lies in the lack of contact you get through your delegate. He hears, learns and profits much. He comes away enlightened, enthused and inspired, but you get little. Last year I recommended sending the editor of our state journal to future meetings, because he could better report the gleanings to you. I still advise this procedure. Some of my editorials you have already seen. Others are forthcoming, and all are based largely upon the proceedings of this great congress. I am again pleased to have represented you at this national gathering, and trust you may profit with me in some degree at least, because of this report.

Respectfully submitted,
—J. S. Welch.

COUNCILOR MEETING, MAY 12, 1925, 5 P. M.

The Council was called to order by President Douglas. All members were present.

The report of the Committee on Public Policy and Legislation was read. It was moved to recommend to the House of Delegates that they accept the report and that the report be placed on file. Seconded. Carried.

The report of the Campaign Committee was read. It was moved that the report be accepted by the House of Delegates and placed on file. Seconded Carried.

The matter of Dr. Lynch's of Fairbury appeal to the Council was next taken up. After some discussion Dr. Lehnhoff moved that it be the opinion of this Board of Councilors that the Secretary of the Council advise Dr. Lynch of Fairbury, that before personally stating his case before this Council, that he meet with and make his defense before his County Society. It is further advised that inasmuch as possible, if not in entirety, his defense be made in writing. Seconded by Dr. Fordyce. Carried unanimously.

Moved by Dr. Lehnhoff that the Council notify the Jefferson County Medical Society of the above action, and request them to give Dr. Lynch a hearing if he requests it.

Adjourned until 9 p. m.

Meeting called to order at 9 p. m. Members present: H. J. Lehnhoff, L. W. Rork, F. W. Plehn, R. D. Bryson, H. E. Potter, A. E. Cook, S. A. Preston, A. P. Overgaard, W. J. Douglas.

A letter from Dr. A. G. Rich to Dr. Downing was read. Moved to refer matter to the Councilor, Dr. Frank Tornholm, and for him to confer with the County Society in question. Seconded. Carried.

A letter from I. F. Richardson of Fremont was read.

Moved by Dr. Bryson that inasmuch as the State Association received no notice of any action by the Dodge County Society, that this matter does not properly concern the Council. Seconded. Carried.

The report of Dr. J. S. Welch on the meeting in Chicago of the Council on Medical Education was read. Recommended to the House of Delegates and placed on file.

Adjourned.

Meeting of the Council, Wednesday, May 13, 1925,
Lincoln Hotel, Lincoln.

The Council was called to order by President Douglas. Seven members present. It was recommended to the House of Delegates that the report of the Delegate to Council on Medical Education of the A. M. A., Drs. Dunn and Fouts' report on the meeting of the A. M. A. and the report of the Committee on Public Activities be accepted and published in the Journal. It was also recommended that Dr. Long's report of the Journal & Publication Committee be accepted and placed on file.

It was moved that the following budget for 1925 be recommended to the House of Delegates for adoption:

Journal Fund, per member	$ 1.75
Councilor District Meetings	360.00
Campaign Committee	500.00
Secretary-Treasurer's Office	800.00
Secretary-Treasurer's Salary	600.00
Librarian	25.00
Salary of Chairman of Defense Committee	600.00
Expense of Medico-Legal Defense Committee	200.00
Councilors' Expense	305.36
Official Reporter	150.00
Librarian, Miss Hillis	100.00

HOUSE OF DELEGATES

First Session

Lincoln Hotel, Lincoln. Tuesday, May 12, 1925, 1 p. m. The House of Delegates was called to order by President Palmer Findley. Roll call by Secretary Adams showed 47 members present.

It was moved that the reading of the minutes for 1924 be dispensed with. Seconded. Carried.

Moved by Dr. Hohlen and seconded by Dr. Wait that Dr. E. W. Rowe be elected president pro tem, and the Secretary be instructed to cast the unanimous ballot. Motion carried. The Secretary cast the unanimous vote of the Nebraska State Medical Association for Dr. E. W. Rowe as President pro tem. It was moved that Dr. A. C. Rumery substitute for the delegate from Custer County. Seconded and carried. It was also moved, seconded and carried that Dr. Harold H. Walker substitute for the delegate from Lincoln County.

Dr. Overgaard, Secretary of the Board of Councilors, stated that since his report had been published in the Journal, he would not make it at this time, unless desired by the House. Moved. Seconded and carried to accept Dr. Overgaard's report as published.

Dr. Adams stated that the report of the Program Committee, and the report of the Secretary-Treasurer had been published in the Journal, and he would not make them at this time unless desired by the House. Moved, seconded and carried to accept Dr. Adams' report as published.

The report of the Committee on Public Policy and Legislation was read by Dr. Adams, and referred to the Council by President Findley.

Dr. Adams reported that Dr. Long was out of town, and that he had asked to read his report of the Journal and Publication Committee tomorrow.

No reports were given by the Committees on Care and Prevention of Contagious Diseases and Medico-Legal Defense.

Dr. Hohlen gave a report of the Committee on Campaign, which was referred to the Council.

Dr. J. S. Welch gave a report of the Committee on Medical Education. Referred to the Council.

Dr. Clyde Roeder gave a verbal report of the Committee on Public Activities, which will be followed later by a written report.

Dr. Overgaard gave a report on Memorials, the House standing during its reading, and moved that a page be set aside in the Journal in memoriam for the dead. Motion seconded and carried.

Dr. Bailey moved that this Association extend its sympathy and best wishes to Dr. Lowry. Seconded. Carried.

No Communications were read.

Dr. Weber moved that the Secretary and President draft a resolution complimenting the governor for vetoing the compensation bill. Seconded. Carried.

The Secretary called attention to the House of Delegates that there were two amendments to the By-Laws to be considered.

The Chair gave a three-minute recess for the members from the different Councilor districts to decide on the members of the Nominating Committee. The House was called to order and the following names were given as the members of the nominating Committee:

1st District, Floyd Clark.
2nd District, K. S. J. Hohlen.
3rd District, C. J. Hustead.
4th District, John Buis.
5th District, J. S. Devries.
6th District, E. O. Weber.
7th District, Porter Dodson.
8th District, W. J. Douglas.
9th District, L. Phelan.
10th District, J. M. Willis.
11th District, H. H. Walker.
12th District, A. L. Miller.

Dr. Adams read a few announcements for the Entertainment Committee.

Dr. Clark moved that the question of raising dues for the State Association for the purpose of providing means for carrying on a Publicity Campaign be the first order of business tomorrow. Seconded. Carried.

Adjourned until 1 p. m. Wednesday, May 13.

HOUSE OF DELEGATES

Second Session

Lincoln Hotel, Lincoln. Wednesday, May 13, 1925, 1 p. m.

The House of Delegates was called to order by President Findley. Roll call by Secretary Adams showed 50 members present.

It was moved, seconded and carried that Dr. Dodson of Saline County be seated. It was also moved that Dr. Charles Lucas of Buffalo County be seated. Seconded. Carried.

Minutes of the first session were read by Secretary Adams, and stood approved.

The following amendment to the By-Laws was read by Dr. Nielsen:

"Amendment to Section 2, Chapter 5 of the By-Laws of the Nebraska State Medical Association: that Sec. 2 of Chapter 5 of the By-Laws be changed to read as follows: "The House of Delegates on the first day of the Annual Session shall elect a President pro tem, who shall preside in the absence of the President of the Association, and it shall select a Committee on Nominations consisting of one delegate from each councilor district. No delegate shall be eligible to appointment on this committee who has not been three years an active member of this Association. It shall be the duty of this Committee to consult with the members of the Association and to hold one or more meetings at which the best interests of the Association and of the profession of the State for the ensuing year shall be carefully considered. The Committee shall report the result of its deliberations to the House of Delegates in the shape of a ticket containing the names of three members for the office of President, and, of one member for each of the other offices to be filled at that annual session. Said Nominating Committee shall be bound upon its honor not to divulge its deliberations, nor any part of the ticket agreed upon until called for, as provided in Section 3, of this Chapter."

Moved that this be placed on file and recommended for passage. Seconded and carried. Dr. Nielsen explained that this amendment becomes operative immediately.

After a discussion of the matter of raising the dues of the State Association, it was moved that this matter be referred to a committee of three. Seconded. Carried. President Findley appointed the following committee of three to report on the matter tomorrow: Morris Nielsen, E. W. Rowe, R. D. Bryson.

Dr. Overgaard read the report of the meeting of the Council. Moved that report be adopted. Seconded. Carried.

Dr. Long read the report of the Committee on Journal and Publication and it was referred to the Council by President Findley.

Dr. Welch read the report of the Delegate to the Council on Medical Education of the A. M. A. Referred to the Council.

Dr. Dunn's report on the Meeting of the A. M. A. this spring was read by Secretary Adams, and he moved that owing to its importance, it be published in the Journal. Seconded. Carried.

Dr. Overgaard moved that the $50 monthly salary of the Chairman of the Defense Committee be striken out. Matter was referred to Council.

There being no new business to discuss, the House adjourned until 8 a. m. tomorrow.

HOUSE OF DELEGATES

May 13, 1925

A special meeting was called, by President Findley and the report of the Committee appointed by the president to consider the question of raising the dues reads as follows:

"A motion to amend Paragraph 1, Section 1, Chapter XII of the By-Laws to read: that an assessment of $8 per capita on the membership of the component societies is hereby made the annual dues of this association."

Morris Nielsen.
E. W. Rowe.
R. D. Bryson.

Moved, seconded and carried that the above amendment be recommended to the House of Delegates for passage at its next session.

HOUSE OF DELEGATES

Third Session

Lincoln Hotel, Lincoln. Thursday, May 14, 8 a. m.

The House of Delegates was called to order by Dr. Rowe, President pro tem.

The roll call by the Secretary showed 47 members present.

Minutes of the second session were read by Secretary Adams, and with one correction stood approved.

Dr. Hohlen read the following report of the Nominating Committee:

To the House of Delegates:

Your Nominating Committee has after due deliberation prepared the following slate:

For president—Dr. B. R. McGrath, Grand Island, Nebr; Dr. H. J. Lehnhoff, Lincoln, Nebr.; Dr. H. S. Potter, Fairbury, Nebr.

For vice president—Dr. P. F. Dodson, Wilbur, Nebr.; Dr. E. O. Weber, Wahoo, Nebr.

Delegate to the A. M. A.—Dr. A. D. Dunn, Omaha, Nebr.

Alternate—Dr. Frank Morrow, Columbus, Nebr.

As Councilors—Dr. S. A. Preston, Fremont, 5th district; Dr. Frank Tornholm, Wahoo, 6th District; Dr. H. E. Potter, Fairbury, 7th district; Dr. W. J. Douglas, Atkinson, 8th district; Dr. W. Fast, Ingleside, for the unexpired term in the 10th district.

Delegate to Council on Medical Education—Dr. J. S. Welch, Lincoln, Nebr.

Publication Committee—Dr. B. F. Bailey, Lincoln, Nebr.

Medico-Legal Defense Committee—Dr. Czar C. Johnson, Lincoln, Nebr.

Public Activities Committee—Dr. Clyde Roeder, Omaha, Nebr., 5 years; Dr. Morris Nielsen, Blair, Nebr., 4 years; Dr. Palmer Findley, Omaha, Nebr., 3 years; Dr. Lucien Stark, Hartington, Nebr., 2 years; Dr. F. A. Long, Madison, Nebr., 1 year.

Respectfully submitted,
P. F. Dodson, Chairman.
K. S. J. Hohlen, Secretary.

There being no nominations from the floor, the House was ordered to proceed with the election. Drs. Lucas, Bryson and Willis were appointed tellers. The secret ballot for President-elect resulted as follows: Lehnhoff, 25; McGrath, 15; Potter, 4; Lucas, 1. Dr. Lehnhoff was declared elected.

Due to the fact that there were no nominations from the floor, it was moved, seconded and carried that the Secretary cast the unanimous vote of the House for the election of the following:

Vice Presidents—P. F. Dodson, E. O. Weber.

Delegate to the A. M. A.—A. D. Dunn.

Alternate to the A. M. A.—Frank Morrow.

Councilors—S. A. Preston, 5th district; F. Tornholm, 6th district; H. E. Potter, 7th district; W. J. Douglas, 8th district; W. Fast, for unexpired term of the 10th district.

Delegate to Council on Medical Education—J. S. Welch.

Publication Committee—B. F. Bailey.

Medico-Legal Defense Committee—Czar C. Johnson.

Public Activities Committee—Clyde Roeder, 5 years; W. Y. Thompson, 2 years.

Upon withdrawal of Dr. Nielsen from the nomination for the 4 year term, it was moved, seconded and carried that the Secretary cast the unanimous ballot for Dr. Lucien Stark of Hartington for this place.

There being one nomination from the floor for the 3 year term, the House proceeded with the election by secret ballot, which resulted as follows: B. R. McGrath, 16; Palmer Findley, 15. Dr. McGrath was declared elected. Upon withdrawal of Dr. Long from the nomination for the 1 year term, it was moved, seconded and carried that the Secretary cast the unanimous ballot for Dr. Welch of Lincoln for the place.

The votes were cast as ordered.

It having been decided that the raising of the dues should be the second order of business at this meeting, this matter was now brought up. The report of the special session of the House of Delegates on May 13, 1925, at 5 p. m. recommending for passage the following motion was read:

"To amend Paragraph 1, Section 1, Chapter XII of the By-Laws to read: That an assessment of $8 per capita on the membership of the component societies is hereby made the annual dues of this Association."

Morris Nielsen.
E. W. Rowe.
R. D. Bryson.

After a general discussion it was moved that the report be passed. Seconded. Carried.

The Secretary asked permission of the House of Delegates to allow Miss Summers of the Department of Public Welfare to appear before the General Sessions on Thursday afternoon, May 14. It was moved that Miss Summers be allowed to appear before the General Sessions for five minutes. Seconded. Carried.

Moved that the appropriation of $600 a year salary of the Chairman of the Medio-Legal Defense Committee be striken from the Councilors' report. Seconded. After some discussion, Dr. Bailey moved to lay motion on the table. Seconded. Carried.

Dr. Adams read the report of the Councilors' meeting as follows:

"May 13, 1925. The Council was called to order by President Douglas. Seven members were present. It was recommended to the House of Delegates that the report of the Delegate to the Council on Medical Education of the A. M. A., Dr. Dunn's report on the meting of the A. M .A. and the report of the Committee on Public Activities be accepted and published in the Journal. It was also recommended that Dr. Long's report of the Journal and Publication Committee be accepted and placed on file.

It was moved that the following budget for 1925 be recommended to the House of Delegates for adoption:

Journal fund, per member	$ 1.75
Councilor District Meetings	360.00
Campaign Committee	500.00
Secretary-Treasurer's Office	800.00
Secretary-Treasurer's Salary	600.00
Librarian	25.00
Salary of Chairman of Defense Committee	600.00
Expense of Medico-Legal Defense Committee	200.00
Councilors' Expense	305.36
Official Reporter	150.00
Librarian, Miss Hillis	100.00

Railroad fare of Delegates to A. M. A. and Delegate to Council on Medical Education to be allowed on proper presentation of amount, also Program Talent.

Moved and seconded that the item of $100 for the Librarian, Miss Hillis, be omitted from this report. Carried. Moved that report as amended be accepted. Seconded. Carried.

Moved that the next annual meeting of the Nebraska State Medical Association be held in Omaha. Seconded. Carried.

Dr. Overgaard moved that a rising vote of thanks be tendered the Lancaster County Society for the wonderful entertainment afforded the Association during the meeting. Seconded. Carried.

Moved the House to adjourn Sine Die. Seconded. Carried.

HOUSE OF DELEGATES ATTENDANCE

County	Delegate & Alternate	Meetings 1st	2nd	3rd
Adams	W. S. Fast			
	G. L. Pinney			
Boone				
Box Butte	H. A. Copsey			
Buffalo	Chas. Lucas		1	1
Burt	S. W. Swenson		1	1
	R. E. Hall			
Butler	H. E. Burdick		1	
	J. G. Marron			
Cass	O. E. Liston			
	G. G. Douglas			
Cedar-Dakota-Dixon Thurston-Wayne	John Buis	1	1	1
Chase-Dundy-Hayes-Hitchcock	E. M. Stewart			
Colfax	W. J. Kavan			1
	F. G. Vosika			
Clay	J. O. Latta			
	G. H. Bentz	1	1	1
Cuming	H. W. Francis	1	1	1
Custer	A. C. Rumery	1	1	
	F. A. Burnham			
Dawson	J. H. Fochtman	1	1	1
	E. C. Stevenson			
Dodge	J. S. Devries	1	1	1
	Andrew Harvey			
Fillmore	J. Bixby		1	1
Franklin	H. C. Smith		1	
	R. B. Campbell			
Furnas	R. D. Green		1	1
Gage	F. W. Buckley	1	1	1
Hamilton	J. M. Woodard			
Hall	L. Phelan	1	1	1
Harlan	J. P. Feece			
	J. N. Campbell			
Holt & Northwest	R. E. Kriz	1		
Howard	A. H. Holm	1		
Jefferson	J. M. Powell			
Johnson	A. P. Fitzsimmons			
Kearney				
Keith-Perkins				
Kimball	A. L. Miller	1	1	1
Knox				
Lancaster	Geo. Covey		1	1
	J. J. Hompes			
	H. H. Wait	1	1	1
	S. C. Clements			
	K. S. J. Hohlen	1	1	1
	J. S. Welch			
Lincoln	H. H. Walker	1	1	1
Madison-Stanton-Pierce-Antelope	G. E. Charlton			
	A. M. Sonneland			
Merrick				
Nance	Homer Davis			
Nemaha	B. F. Lorance	1	1	
Nuckolls				
Omaha-Douglas	A. R. Knode			
	A. F. Tyler			1
	H. B. Hamilton			
	J. T. Langdon	1	1	1
	Floyd Clark	1	1	1
	Fred J. Wearne			
	Lynn Hall			
	G. F. Simanek			
	C. R. Kennedy			
	R. A. Moser		1	
	H. A. Wigton			
	C. O. Rich		1	1
Otoe	A. P. Ginn			
Pawnee	W. R. Boyer			
	J. F. Prendergast			
Phelps	J. L. Magill			
	P. A. Sunbury		1	1
Platte	F. H. Morrow	1	1	1
	J. E. Meyer			
Polk	J. C. Malster	1	1	1
Red Willow	J. M. Willis	1	1	1
Richardson	W. E. Shook		1	1
Saline	Porter F. Dodson		1	
Saunders	E. O. Weber	1	1	1
	C. Q. Dodd			
Scottsbluff	A. L. Cooper	1	1	1
Seward				
Thayer	H. W. Saylor			
	F. A. McGrew			
Valley				
Webster				
York	S. O. Harris	1	1	1
Washington	G. A. Langstaff	1	1	1

COUNCIL

A. P. Overgaard	1	1	1
H. J. Lehnhoff			1
C. P. Fordyce	1	1	1
A. E. Cook	1	1	1
S. A. Preston	1	1	1
Frank Tornholm	1	1	1
H. E. Porter	1		
W. J. Douglas	1	1	1
R. E. Bryson	1	1	1
L. W. Rork	1	1	
C. A. Selby	1		1
F. W. Plehn	1	1	1

OFFICERS

President	Palmer Findley	1	1	
Vice-Presidents	F. S. Owen	1		
	R. D. Bryson	1	1	1
Sec.-Treas.	R. B. Adams	1	1	1
Librarian	W. P. Wherry			

EX-PRESIDENTS

M. L. Hildreth	1	1	1
A. S. von Mansfelde	1		
J. E. Summers	1		
W. O. Bridges			
A. R. Mitchell			1
H. M. McClanahan	1		
A. E. Jonas			
F. A. Long		1	1
Harold Gifford			
L. M. Shaw			
P. H. Salter			1
J. P. Lord			
I. N. Pickett			
J. P. Gilligan			
E. W. Rowe	1	1	1
W. F. Milroy			
C. L. Mullins			
J .M. Banister			
H. W. Orr			
M. S. Moore			1
B. B. Davis		1	
B. F. Bailey	1	1	1
Morris Nielsen	1	1	1

In Memoriam

Released from earthly toil and strife,
With God is hidden still their life;
Thine are their thoughts, their works, their powers,
All Thine, and yet most truly ours;
For well we know, wher'er they be,
Our dead are living unto Thee.

* * *

Inscribed to the Memory of

Jugertha S. Wainwright	Sept. 10, 1924.
Russell Harrison Morse	Oct. 25, 1924.
Carl Leonard Swanson	Dec. 1, 1924.
T. D. Thompson	Jan. 13, 1925.
Alik Van Zandt Robinson	Jan. 24, 1925.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
Terminal Building, Lincoln, Nebraska.

F. A. Long, M. D., Editor.....Madison, Neb.
R. B. Adams, M. D., Asociate.....Lincoln, Nsb.
Manager.....Lincoln, Neb.
1012 Terminal Building, Lincoln, Neb. Tele. B2625.

COMMITTEE ON JOURNAL AND PUBLICATION.
F. A. Long, Chairman.....Madison
W. O. Bridges.....Omaha
B. F. Bailey.....Lincoln
R. B. Adams, Ex officio.....Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewriten, double-spaced, not the carbon, submitted.

Reprints should be ordered from the printer, The Huse Publishing Co., Norfolk, Neb.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. X July No. 7

MEDICAL EDUCATION

The address of President Findley at the annual meeting of the Nebraska State Medical Association, evidently based upon the address of President Pusey of the American Medical Association, emphasizes many things that are worthy of consideration. It emphasizes the long, definite and specialized education of the medical student; it emphasizes the tendency to centralize the medical profession in the cities to the neglect of rural communities; it emphasizes what is somewhat evident, the unwillingness of the younger practitioners to be away from the shadow of the hospital, the laboratory, and all that goes to make the perfect equipment of the clinical center. These are facts that have been recognized to quite an extent by almost the entire profession, and probably it has been especially criticized by those of us who were educated in other days and who received much of the practical side, less of the laboratory side and possibly were introduced to some short cuts. We, however absorbed in our educational days and have continued to absorb since, during our years of service, an appreciation of ethical and educational justice.

It seems we ought to be very wise and very careful lest in throwing our influence to an unkindly criticism of the thorough educational equipment of today, we give the pendulum a push that shall make it swing too far the other way. The medical profession needs exactly what every line of work needs, the acquirement of the basic educational foundation for their work, with all of the addition possible in perfection of detail and knowledge acquired from allied branches but yet permitting the student to become self-sustaining as soon as possible after he has reached the point of preparation that makes him safe and not a menace to those whom he shall serve. It is possible that too much dependence upon the laboratory and upon the instruments of diagnosis may sometimes render a man dangerous, if he seeks the cause theoretically and with prolonged delay while the patient wavers between life and death. On the other hand, used properly, one cannot have too perfect an education in preparation for the practice of medicine, if he is, along with his wise education, taught a practical use of the same.

Is it not well to consider that after all we do not need to cut short the education but we need to have our instructors teach the students the breadth of experience that comes to them when placed on their own reliance in the rural community where we meet every variety of ailment and accident? To teach the student that in the everyday work of life he may not be able to do all of his own laboratory work and spend long hours in the laboratory, but his education must be such that he will know when to refer for certain sought-for facts to the man whose business it is to do laboratory work and that alone, and how to interpret the findings of the same? To give the broad teaching that makes it possible for the young practitioner to walk safely without a stumble for he knows when he is safe to go alone and when he needs to call his confrere? In other words, not less education, but more cautionary training in the way to use the education acquired.

THE DOCTOR'S FEE

"Three faces wears the doctor; when first sought
An angel's—and a god's the cure half wrought:
But, when that cure complete, he seeks his fee,
The devil looks then less terrible than he."

Epigram of Euricus Cordus.

The above epigram is illustrated by Wadd in referring to a conversation which passed between M. Bonvart and a French Marquis. As he entered a chamber, on a certain occasion, he was thus addressed by his patient: "Good day M. Bonvart, I feel quite in spirits; I think my fever has left me." "I am quite sure of it," replied the doctor. "Pray explain yourself," replied the Marquis. "Nothing more easy',' replied Bonvart. "In the first days of your illness, when your life was in danger, I was your dearest friend; as you began to get better, I was your good Bonvart and now I am M. Bonvart—depend upon it you are quite recovered."

Much has been said of the doctor's fee—rarely in commendation, more often in condemnation. Admitting that exorbitant charges have been made by individual members of the profession, but then only in exceptional cases, the fact remains that the practice of medicine from the economic point of view is not alluring. To obtain a medical education such as will qualify to take high rank in the field of medicine requires not less than twelve years from the time of leaving the grammar school and at least five more years should be added if one is to engage in a highly specialized service. Such a training would cost not less than $20,000. Were this amount of money placed at 6% interest at the age of 18 years and the interest compounded until the age of sixty-five, the amount would be in the neighborhood of $300,000. Few doctors posses such a sum of money at the end of their career.

The physician who saves a life seldom receives more than two or three hundred dollars and more often less—sometimes nothing. Morris Richardson of Boston was said to have received the largest fees for appendectomies of any living surgeon. Admitting the possible accuracy of this assertion he said that he had received as high as $15,000 for a single operation, but his average fee per appendectomy was $7.85. John B. Murphy once told the writer that he did not make his living from major operations on the wealthy but rather from small fees from ordinary operations upon ordinary people.

Even the occasional large fee for medical or surgical service sinks into insignificance when we hear of John McCormick receiving $10,000 for a song, of Babe Ruth swatting a home run at $500 per, of Jack Dempsey with his million dollar income in a single year, and a half million more as his share of the Dempsey-Firpo fight. Half this sum would not be earned by the average doctor in a life time. Will Rogers writes a humerous article of a thousand words and received a fee five times as great as that for a life-saving operation. In a single afternoon Irving Berlin wrote "My Wife's Gone to the Country" and was remunerated with the equivalent of an income for the average practitioner for forty years of precious toil. There are president's of corporations with incomes approaching a million dollars a year. Does anyone know of a doctor receiving the half of that amount? And yet there are lawyers such as Samuel Utermyer with incomes approaching a million dollars. The Chicago Bar Association adjudged the fee of $120,000 paid to Clarence Darrow for saving the necks of Loeb and Leopold—"a reasonable professional fee." Would this learned body of jurists approve of such a fee had a doctor saved their lives?

Compared with such compensations it is evident that the doctor must not expect his reward in currency but rather must he couple the monetary rewards with the satisfaction of doing something that is really worthwhile. Anyway, he does not have to pay the income tax of a Rockerfeller, a Henry Ford or a Douglas Fairbanks.

—Palmer Findley.

ANNUAL DUES FOR 1925

At its last meeting on Thursday morning, May 14, 1925, the House of Delegates decided, with only one dissenting vote, that the annual dues for the Nebraska State Medical Association for 1926 and following years should be $8.00 per member. This was the most seriously considered business taken up by the House of Delegates during the meeting. The subject was introduced the first day, and a committee was appointed to thoroughly canvass the sentiment of the members who were attending the sessions.

An increase in the dues had been urged for some time from two sources. The Defense Committee ran behind $1,000.00 during 1924, and faces a similiar deficit this year. This Committee felt that the Association was faced with the proposition of either discontinuing the Defense work or of providing means of securing more money. It felt that due to its success in the defense of members that it would be a bad policy to do away with this work. Also, if this work was not done by the Association, the members would have to carry similiar insurance with private companies and the expense to the individual member would be much greater.

The Public Activities Committee has also been handicapped in its work by a lack of money. Publicity of the kind wanted cannot be had for nothing. If this Committee is to be successful in its work of selling the doctor to the public, it must be able to do its work well. Also, this Committee wants to be able to build for a future full-time field secretary.

The committee appointed made the above recommendation, and it was passed to become effective January 1, 1926. The writer thinks that this expressed the almost unanimous sentiment of the meeting, and by this action, the State Association will be able to develop and be of much more service to its members.

—R. B. Adams.

REPORT OF THE OTO-LARYNOLOGICAL MEETINGS AT ATLANTIC CITY

The meeting of the American Medical Association at Atlantic City this year, preceeded as it was by the meeting of the American Bronchoscopic Society on Thursday, the American Laryngological Rhinological and Otological Society on Friday, Saturday and Monday, and the Endocrinological Society on Tuesday, was of great interest to the specialists in Oto-Rhino-Larynogology. The attendance at all the meetings was large, that of this section being the largest. The large hall which was provided was inadequate to accomodate the members in attendance.

At the meeting on Bronchoscopy Dr. Fielding A. Lewis of Philadelphia, presented a paper showing the feasability of introducing a bronchoscopic tube into the trachea to facilitate breathing while doing a tracheotomy in urgent cases. The tube also acting as a guide to the operator and greatly facilitating the operation.

Dr. E. G. Gill of Roanoke, presented a unique method of tracheotomy, using a curved, sharp pointed tube. This he introduces through the mouth, passes through the larynx and then out through the wall of the trachea and soft tissues. The tracheotomy tube is then placed over the tip of this tube and introduced into the trachea as the former is withdrawn.

Dr. L. H. Clerf of Philadelphia, recited a number of cases of spontaneous removal of foreign bodies which he characterized as excellent when it happens, but not to be relied upon.

In the Triological Society, of special interest was the report of Dr. John E. Mackenzie of New York, on total laryngectomy at one stage for cancer of the larynx. He also demonstrated his artificial mechanical larynx which enabled the subject to talk distintcly and with fair volume. He presented two patients to demonstrate the use of the artificial larynx.

Dr. Harry W. Lyman and Dr. A. M. Alden of St. Louis, reported a series of cases of gastro-intestinal disturbances in infants secondary to mastoiditis. The cardinal symptoms were intense gastro-intestinal disturbances, going rapidly into inability to retain food or liquids, dehydration, toxemia and death if the ear condition was not recognized early. The ear often showed very little evidence of inflammation. The membrana tympana may be inflamed, but often showed nothing more than lack of lustre. The canal usually showed sagging of the posterior wall. Paracentesis was of little benefit and often no pus was present. Early external drainage of the mastoid antrum gave relief. If this was delayed until no food could be retained and much dehydration had occurred the outcome was usually unfortunate.

Dr. Thomas J. Harris of New York, reported a case of furuncle of the nose resulting in septicemia. Successfully treated by injections of Mercurochrome. He advised against incising furuncles of the nose until the abscess was well circumscribed on account of the danger of thrombosis of the cavernous sinus; this latter probably being due to the anatomical conditions, there being no valves in the veins passing from the nose to the sinus.

In endocrinology Dr. J. B. Collip of Edminston, Canada, presented his work on the preparation of the active principal of the parathyroids and his results in the complete control of convulsions of post-operative parathyroidectomies. The experimental work was done on dogs. Its use has now been fully confirmed on man.

In the American Medical Section Dr. Lee W. Dean of Iowa City, Iowa, demonstrated by lantern the early and extensive infection of the paranasal sinuses in children.

Dr. Robert C. Lynch demonstrated a method of Radical Frontal Sinus by removing the supra-orbital plate only, thus preventing any post-operative deformity. Dr. C. F. Zerger of Chicago, gave a valuable review of the finding in the cerebro-spinal fluid of all intracranial conditions secondary to otitic infection in the Cook County Hospital for the past fifteen or twenty years. This paper must be read as it is too complicated to summarize.

Dr. A. W. Adson of Rochester, Minnesota, reported a number of cases of anastomosis of the facial and spinal accessory nerves for facial paralysis. The results were excellent. The method presented by Frazeur of Baltimore to the section last year was discussed and compared. He uses the hypoglossal for anastomosis.

The writer reported a case operated by Dr. Alfred Brown of Omaha for us by the latter method, with an excellent result. (This case was reported at the last State Medical Society meeting in Lincoln by Dr. Brown.)

Dr. William B. Chamberlain of Cleveland, presented a method of tonsil injection for local anesthesia as a possible means of preventing deep cervical abscess. His method is to grasp the tonsil and pull it well out of the fossae and then inject back of the tonsil, being careful not to introduce the needle into the tonsil and thus carry infection into the tissues. This is an excellent method and was first described in Pittsburgh about four years ago.

The Section was honored this year by the election of one of its members, Dr. Wendel Philips of New York City, to the office of President of the Association. The railroad arrangements were very satisfactory. The board walk as charming as ever and the sea food excellent.

Jno. B. Potts,
600 Brandeis Th. Bldg.,
Omaha, Nebr.

THE A. M. A. MEETING AT ATLANTIC CITY, N. J. — SECTION ON DISEASES OF CHILDREN

As briefly as possible I will try and abstract only the papers that I consider of value to the family physician. I will say that there has been a great tendency this year to respect the general physician, and a great effort was made in many instances to simplify classifications of diseases, also to diagnose clinically by methods employing only the simpler laboratory tests, and by apparatus that the average physician is already equipped with.

This was especially noticeable in the classification and diagnosis of kidney disease. The functional tests were worked out by specific gravity tests on no fluid or food intake, then on a large amount of fluid intake within a few hours, and with a heavy meal. These tests were controlled by the modern phthalein functional tests, and found to check almost exactly. The nitrogen and creatinin tests were not considered at all essential in the diagnosis.

Perhaps one of the most interesting subjects taken up at this session of the A. M. A. was the subject of the Dick test and active immunization with scarlet fever toxin and also the use of scarlet fever antitoxin. Always hand in hand with this subject was the use of the shick test and the toxin anti-toxin for immunization. Dr. Abraham Zingher of New York, who is an authority on the Shick test reactions and on toxin anti-toxin immunization, was on the program for a paper, entitled "The Dick Test and Active Immunization with Scarlatinal Toxin". Dr. W. H. Park, of New York, read a paper entitled "The Uses of the Scarlet Fever Streptococcus Toxin and Antitoxin in the Diagnosis, Prevention and Cure of Scarlet Fever". Dr. George Dick of Chicago presented a paper on the subject "The Therapeutic Results with Scarlet Fever Antitoxin".

Dr. Zingher was there with his fighting clothes and seemed to be insistent that Dr. Dick get no glory further than the Dick test. He insisted that Mosher, back in 1902 or 1903 had developed a serum with antitoxic properties that does as much and he believes more than the present Dick development. He also quoted from a certain Russian physician who developed a streptococcus toxin in 1907 which is very similar to the present Dick product. Dr. Park was more diplomatic than Dr. Zingher, yet one could see that he was hardly willing to permit the Drs. Dick to have the full glory of the discovery of the scarlet fever antitoxin.

Briefly the status quo of the Shick and Dick tests and immunization are as follows:

The Shick test and toxin antitoxin are perfected and every physician should familiarize himself with the administration and immediately start in with himself and family, then persistently try to immunize the community in which he lives.

The Dick test is considered perfected and should be used to determine the susceptibles to scarlet fever, the reaction is similar, but quicker and more transient. The reading must be made in 24 to 36 hrs.

The immunization with streptococcus toxin is still in an experimental stage. The immunization therefrom lasts from 12 to 15 months. It is considered better practice to immunize with scarlet fever antitoxin when a direct exposure has occurred. The scarlet fever antitoxin in scarlet fever should be administered early, 15 to 20 c. c. of the Dick concentrated serum being given.

Dr. J. C. Montgomery of Detroit, recommended early spinal puncture in acute poliomyelitis. If possible, do it before the 3rd day, and repeat every 12 to 24 hours until pressure is relieved. In conjunction with this, give Rosenow's serum intra-muscularly. He reports that paralysis seldom occurs with this routine.

Dr. Louis Sauer of Evanston, Ill., reported several cases of neonatal pyelitis, preponderance in males. Gastro intestinal symptoms predominate. Night and day alkalization proved a cure.

Dr. Moffett of New York, reported his observations for 10 years on pneumonia, with a death rate of 9%. The discussion revealed the fact that we have no specific treatment, every man has his own treatment; also that we are practically unanimous for the use of warm, fresh air in all types. Dr. Moffett urged early digitalization, but this was objected to by Dr. Morse of Boston, Dr. Abt of Chicago, and others. It was believed that stimulation is rarely necessary in the treatment of young children.

Dr. M. S. Cohen of Philadelphia, paper entitled "A Method of Eliminating the Etiologic Organisms in Treating Endocarditis" said that the predominating organism in a culture was not always the offending one. To determine the correct organism in case one wishes to make an autogenous vaccine, he suggests the following method. After swabbing the throat or area to be tested, drain swab lightly over culture media, then use swab in end of sterile test tube rubbing some of the material onto the glass. Then draw some blood from patient's vein and place into the inocculated sterile test tube, you will then have a growth of the offending organism, all others will be eliminated by the bactericidal properties of the blood.

Dr. Joslin gave an address on "The Growth, Development and Prognosis of Diabetic Children". In his report of 294 children, he was able to trace, before the discovery of insulin, 164 died, 130 alive. Since insulin and since 1922, a group of 130 cases, 120 are alive, 10 dead. It was common before the advent of this drug for the children not to gain in height or weight. Now they gain more than normal in weight and almost normal in height. Dr. Joslin believes that after one or two years treatment with insulin, that the pancreas undergoes regeneration and the patient needs less or no insulin.

Many other papers were read, but space will not permit me to make a full report.

W. O. Colburn, M. D., Lincoln, Nebr.

EVALUATION OF DOCTORS RELATIVE TO PUBLIC HEALTH WORK

Improvement in public health work has made remarkable advances during the last decade and has kept abreast, if not in the lead, of other advances. The accomplishments are, to a great extent, based upon experience and learning in preventive medicine. A few years ago it was the environment or surroundings that called forth special care and attention. We have learned since that it is the individual and not so much the surroundings wherein the greatest danger lies. These facts have, to some extent, changed the methods used in prevention of communicable diseases. In the first instance, when environment stood out as the principal cause in connection with the spread of these diseases, an organized department of health was recognized as the best means of combating contagion, other methods were secondary. The later discovery that the real menace is confined to the individual places a different picture before those who would eliminate communicable diseases.

The private physician is the prime factor in this field of work, he is the one that first sees the danger signals, it is he in whom the patient and family place implicit confidence, he is in position to give proper advice that will tend to confine the ailment to the one individual. This procedure places the department of health second to the family physician in importance in preventive public health work. The physicians are, to a certain extent, medical inspectors and their hearty cooperation is of immeasurable value, much sought and appreciated by the department of health, and, in turn, the department puts forth every possible effort to merit the good will and confidence of the medical profession.

The chief aim of this department is to maintain and, if possible, further increase the friendly cooperation existing between the medical profession and the department of health. If the family physician fully appreciates the wonderful opportunity before him at the time of his first visit upon a suspected contagious disease, he can, by careful candid advice, stop further spread of the disease. The influence of the family physician with the assistance of the department of health positively eliminate smallpox and diphtheria. The department of health recognizes that the greatest factor for permanent results, sought by all, lies in the efforts put forth by the family physician in attendance upon communicable diseases.

Chauncey F. Chapman, M. D.
Supt. of Health, City of Lincoln.

UNWARRANTED

In the editorial section of the June issue Nebraska State Medical Journal appeared the article "State or Private Laboratory" unsigned—why the obscurity? This is an unwarranted attack on Public Health Laboratories, not borne out by facts, therefore, misleading to say the least. State Health Departments do not maintain laboratories of Clinical Pathology. Ethical private laboratories have a field, they should be encouraged and supported. Unethical laboratories compelled some states to adopt licensing and supervision of private laboratories. One state found this necessary owing to the situation concerning the Wassermann blood reaction tests. Is this obscure writer advocating state inspectors for private laboratories? We hope not.

State Health Department laboratories are working for and in the interest of public health, dealing particularly with the control of contagious and communicable diseases, the work being chiefly bacteriologic, not pathologic. In Nebraska for instance, the Bureau of Health "maintains a laboratory to aid in the diagnosis of infectious and communicable diseases, to aid in the detection of carriers of infectious agents and to make other examinations having to do entirely with public health matters. Examinations having but little public health value such as routine urine analysis, blood counts, pathological tissue, etc., are not made by the laboratory." The above quotation is copied from the printed literature which has been distributed throughout the state. Specimens must be submitted by physicians. It would be absurd for the state to assume that a layman is competent to make a diagnosis.

Abolish the state laboratory if judgment dictates, but just so sure as you do, remember such action will be the greatest stride toward "state medicine" yet made in America. The various state health departments and their personnel have uniformly opposed state medicine.

Upon what basis should abolition of a State Public Health Laboratory be executed? Certain cults have made attempts to abolish state laboratories but without success. Shall the medical profession be placed in the position of being so narrow minded and selfish as to advocate only the Commercial Laboratory, thus drawing into the arena a political battle which would result, when it came to paying the taxpayer's money, into this or that laboratory for Public Health work?

The scope and place of the Health Department Laboratory has been carefully and thoroughly considered at various public health conferences in which our most prominent medical men have participated, their position being in support of such work and their attitude constructive.

June 5, 1925, Lincoln, Nebr.

P. H. Bartholomew,
A. A. Surgeon, U. S. P. H. S.

EDITORIAL PARAGRAPHS

What right has a schoolman who smokes a dirty old pipe to object to a teacher bobbing her hair?

The dangerous age, a survey shows, is from 21 to 24, rather than from 16 to 20, as generally thought.

The editor has made a very wonderful discovery touching the students at the Omaha medical schools: The smiles of the Omaha maidens capture them in matrimony almost to a man, taking a very unfair advantage of the young ladies out in the state.

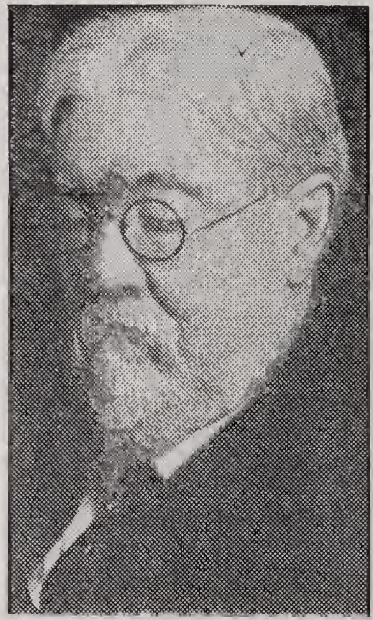
That doctors of the old school whether trained as so-called regulars, homeopaths or eclectics, sense the onward march of scientific medicine is evidenced by the fact that almost without exception they send their sons who are to be trained in medicine to the best medical schools in the country.

In a recent murder trial in Nebraska, paranoia being the defense, three medical experts testified that the man was a paranoiac. The jury found the defendant guilty and he was sentenced for life. How many medical experts would it likely require to convince a jury that electrocution would be a fit sentence?

The possibility that regeneration or formation of new islets in the pancreas of the young person may occur after insulin treatment is begun, was suggested in the case of a 9 year old Toronto boy under insulin treatment whose physical condition had much improved, when he sustained a fracture of the skull from which he died in three hours. A prompt autopsy and laboratory study of the pancreas brought out the findings suggested.

The editor always feels justifiable pride when the Journal A. M. A. abstracts articles published in the Nebraska State Medical Journal. It makes one feel that Nebraska has a real medical journal and some members of the profession who publish outstanding things. Recently the article of Dr. A. L. Smith on "Cardiac Irregularities Due to Extra Systole" and the article of Dr. J. F. Langdon on "Rupture of the Spleen" were so honored.

DR. HAMILTON B. LOWRY



Dr. Hamilton B. Lowry was born in West Virginia in 1850. He received his bachelor's degree and the degree of doctor of philosophy from Union College. The degree of M. D., he received from the College of Cincinnati in 1876. He took post-graduate work at different institutions in the U. S. and also abroad.

He was president of the Nebraska State Medical Association in 1893 and also of the Missouri Valley Medical Society in 1897. He was sent as a delegate from Nebraska to the Pan-American Medical Congress which met in Mexico in 1896. He represented the Missouri Valley Medical Society at a British Medical meeting held in Montreal in 1898. He represented the National Association at an international medical meeting which met in Paris in 1900. For a term of years he was on the medical staff of the University of Nebraska.

Where Dr. Lowry was born, where he was educated or when he came to Nebraska, is not so important as what he meant to Lincoln and Lincoln's people while he was here. Every individual who thinks or philosophizes to any great extent, sooner or later debates in his own mind this question: "What is the meaning of our dwelling here on earth, what manner of man lives the greater life?" Dr. Lowry can be looked upon as one who lived a broad life, who put a great deal into life and who experienced and appreciated much of the good things of life. His road was not a narrow one. His time and his efforts were not directed along just one line. He was not a slave to his profession. His paths were multiple. They led out into many avenues. He traveled these many bypaths with a depth of insight and a keenness of appreciation that few men possess or are ever able to develop.

Several trips abroad in early life had taken him to many cathedrals and galleries of sculpture and painting, the artistic meanings of which he read and interpreted to his friends even to the last days of his life. He was twice president of the Nebraska Art Association. When this association displayed annually the two hundred or more paintings which had been brought in from different galleries and institutions of America, Dr. Lowry was always among the first present at these exhibits to render his service. One was amazed at his knowledge of the paintings and of the painters. It was always a pleasure to review with him these works of art.

When we met him on the book committee of the board of the City Library, he was again uncommonly versatile. He had read and analyzed more books than any of the other members of the board. Many of the literary men, authors and lecturers of note he had met personally.

In his cross-country walks he was again a wide interpreter. He knew many of the flowers and all of the birds. One of his fondest pastimes was his early morning walks through the woods and meadows in the early springtime. Few bird lovers found a greater variety of birds than he found. He was twice president of the Nebraska Bird Club.

Music and the theaters attracted him. He was invariably present at practically all of the performances of merit.

If appreciation of the things and efforts of his day means living a full life, then his stay here was a success.

That he was at least in part a "doctor of the old school," was quite evident. His office was a demonstration of one of the weaknesses of that old institution. It was one of the finest conglomerations of misplaced everything that one could find. He sought a family practice. He loved the relationship which existed between family and family physician, that relationship wherein a physician is a physician to ills more than those that result from disease or injury. The business or commercial side of modern practice was no part of him. His clientele paid him when they were able to pay him. Their ability to pay him lay not only in the amount of material things that they had accumulated, but also in the spiritual responsibility and moral consciousness with which they were endowed. He died poor measured by what he owned, but rich measured by what he appreciated.

I feel that I must relate one incident occurring a few days before his death, which illustrates a side of him much more complete than could be brought out by any effort at description. His stories were multiple. They were short and they were always pointed. In order to again impress upon the physicians and nurses who cared for him during his last illness, how much he appreciated their efforts in his behalf, he endeavored two or three days before his death, to relate the following: He was interrupted by vomiting on two occasions during the narration of the story, but he completed it.

An uncle and a nephew were entertaining a young lady relative from the country. They had taken her to a luncheon at noon, she had been given an automobile ride over the city in the afternoon, at 6:30 she enjoyed a very good dinner at one of the large hotels, after which she was taken to the opera. A light lunch followed the opera and then the young lady was taken to the home of a friend. At the door of her friend's home, just about the time that the nephew and the uncle were to leave, the nephew asked the uncle if the latter thought that the nephew should kiss the country kin good night. The uncle answered by saying, "no, I think you have done enough." That was the last story from Dr. Lowry.

He was released May 21, 1925.

—H. J. Lehnhoff.

MICHIGAN STATE MEDICAL MEETING

The recent annual meeting of the Michigan State Medical Society was unusually important. The outstanding features instituted at this meeting were:

(a) Providing of funds by increasing the annual dues to $10.00 per year.

(b) Providing for means whereby a full time, executive field secretary, working under the direction of the council and the secretary-editor, may be secured.

(c) Providing means whereby the council may institute postgraduate clinical instruction for the benefit of members by conducting clinics in the district and county societies.

(d) Providing for the continuation and extension of the work of the joint committee on public health education and its corps of speakers.

(e) Enabling the council to increase the scope, value and size of the state journal.

(f) Creating plans and policies that will increase the value of membership and contribute to each member a greater return and benefit of membership.

(g) Enhancing the prestige and educational influence of the society, thereby causing it to become potent for public and civic good.

Another evidence of increased organizational activity, was the friendly, spirited campaign for the election of a president of the society, in which, for the first time in fourteen years, it was necessary to open a ballot box for the election of president.

—Journal A. M. A.

THE CREIGHTON UNIVERSITY COLLEGE OF MEDICINE INTERN APPOINTMENTS JUNE, 1925

Abts, F. J., St. Joseph's Hospital, Omaha.
Arnold, H. J., Alameda, County Hospital, San Leandro, California.
Ash, L. J., St. Joseph's Hospital, Omaha.
Barry, W. M., St. Joseph's Hospital, Omaha.
Berchtold, V. E., St. Joseph's Hospital, Omaha.
Berney, F. J., St. Margaret's Hospital, Kansas City, Kans.
Berney, P. W., St. Joseph's Hospital, Omaha.
Christie, E. A., Emergency Hospital, Washington, D. C.
Condon, E. F., Mercy Hospital, Davenport, Iowa.
Delaney, G. C., St. Alexis Hospital, Cleveland, O.
Dolan, E. C., St. Elizabeth's Hospital, Lincoln, Neb.
Harrington, J., United States Public Health Service.
Homan, L. J., Manhattan State Hospital, New York City.
Kelly, E. J., Mercy Hospital, Des Moines, Iowa.
Kilbride, E. A., St. Joseph's Hospital, Omaha.
Korth, Z. N., St. Joseph's Hospital, Omaha.
Magiera, Estelle, St. Joseph's Hospital, Omaha.
Mailliard, A. E., St. Elizabeth's Hospital, Lincoln, Nebraska.
Maly, H. W., St. Joseph's Hospital, Denver, Colo.
Murphy, C. M., St. Joseph's Hospital, Omaha.
McAleer, E. C., Mercy Hospital, Council Bluffs, Ia.
O'Rourke, J. L., St. James Hospital, Butte, Mont.
Pankau, J. B., St. Margaret's Hospital, Kansas City, Kans.
Primasing, R. J., Alameda County Hospital, San Leandro, Calif.
Reed, P. E., Mercy Hospital, Council Bluffs, Ia.
Scanlan, G. C., Mercy Hospital, Davenport, Ia.
Schafer, L. H., St. Joseph's Hospital, Omaha.
Smith, A. J., St. Anthony's Hospital, Denver, Colo.
Sohm, H. A., Mercy Hospital, Des Moines, Ia.
Svoboda, F. C., San Diego County and City Hospital, San Diego, Calif.
Trudeau, E. A., Emergency Hospital, Washington, D. C.
Valker, L. E., Manhattan State Hospital, New York City.
Wacek, F. M., Univ. of Penn. Post Graduate.
Watke, F. M., St. John's Hospital, Omaha.
Welsh, T. F., Holy Cross Hospital, Salt Lake City, Utah.

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE INTERN APPOINTMENTS—CLASS OF JUNE 6, 1925.

Abel, Arthur R., St. Joseph's Mercy Hospital, Sioux City, Ia.
Allen, Edgar V., Mayo Foundation, Rochester, Minn.
Anderson, H. E., Methodist Hospital, Omaha, Nebr.
Bennett, T. W., Northern Pacific Hospital, Missoula, Mont.
Beymer, C. B., Jennie Edmundson Hospital, Council Bluffs, Ia.
Bilon, L. V., Imanuel Hospital, Omaha.
Brehm, P. A., Columbia Hospital, 929 Maryland Ave., Milwaukee, Wis.
Burnett, F. K., Nebr. Methodist Hospital, Omaha, Nebr.
Buzza, Mildred J., New England Hospital for Women and Children, Boston 19, Mass.
Carveth, W. W., Chas. T. Miller Hospital, St. Paul, Minn.
Cloyd, A. D. Jr., Cleveland City Hospital, Cleveland O.
Crowder, Earl E., University Hospital, Omaha.
Custer, L. R., Leland Stanford-Lane Hospital, San Francisco.
Davis, D. D., Murray Hospital, 57 W. Quartz St., Butte, Mont.
Deal, Edwin P., Murray Hospital, 57 W. Quartz St., Butte, Mont.
Deering, D. N., Chicago Memorial Hospital, Chicago, Ill.
Dingman, C. W., Fitzsimmons General Hospital, Denver, Colo.
Distefano, C., Faxton Hospital, Utica, N. Y.
Doty, David A., St. Lukes Hospital, Denver, Colo.
Drummond, D. L., Henry Ford Hospital, Detroit.
Edwards, A. C., Columbia Hospital, Milwaukee, Wis.

Fahrenbruch, F. D., Vassar Bros. Hospital, Poughkeepsie, N. Y.
Folsom, C. H., University Hospital, Omaha.
Forney, L. W., Methodist Hospital, Omaha.
Frary, R. A., Swedish Mission Hospital, Omaha.
Furnish, R. D., St. Lukes Hospital, Kansas City, Mo.
Gilligan, J. P., Long Island College Hospital, Brooklyn, N. Y.
Grau, E. C., San Francisco Hospital, San Francisco, Calif.
Grower, J. H., St. John's Hospital, St. Paul, Minn.
Hansen, Geo. M., Lord Lister Hospital, Omaha.
Hartford, T. J., Methodist Hospital, Omaha.
Hull, E. Ruth, New England Hospital for Women and Children, Boston 19, Mass.
Ira, Gordon H., Long Island College Hospital, Brooklyn, N. Y.
Johnson, C. F., Seaside Hospital, Long Beach, Calif.
Kintner, A. R., Hepperlin Clinic, Beatrice, Nebr.
Kroehler, R. A., University Hospital, Omaha, Nebr.
Kuhlmann, F. W., Methodist Hospital, Omaha.
Lee, R. M., Western Pennsylvania Hospital, Pittsburgh, Pa.
Lewis, Geo. E., T. F. McCarthy, Lincoln, Nebr.
Light, S. E., Northern Pacific Hospital, Tacoma, Wash.
Lovejoy, F. E., Vassar Bros. Hospital, Poughkeepsie, N. Y.
Lundgren, R. W., Long Island College Hospital, Brooklyn, N. Y.
McDaniel, V. S., Swedish Hospital, Seattle, Wash.
McMeekin, H. R., Harper Hospital, Detroit, Mich.
McMillan, J. H., Henry Ford Hospital, Detroit, Mich.
Moe, L. N., St. Lukes Hospital, Jacksonville, Fla.
Morton, H. B., University Hospital, Omaha, Nebr.
Munger, I. C., King County Hospital, Brooklyn, N. Y.
Murphy, Rex L., Colorado General Hospital.
Nelson, Wm. N., Swedish Covenant Hospital, Chicago, Ill.
Nicholson, C. G., Methodist Hospital, Omaha.
Pelikan, E. R., U. S. Public Health Service.
Petersen, E. C., Clarkson Memorial Hospital, Omaha.
Peterson, M. C., Wise Memorial Hospital, Omaha.
Phillips, H. L., Grant Hospital, Chicago, Ill.
Powell, L. S., Clarkson Memorial Hospital, Omaha.
Racines, J. Y., St. Francis Hospital, Grand Island, Nebr.
Ready, F. L., Grant Hospital, Chicago, Ill.
Reed, E. B., Wise Memorial Hospital, Omaha.
Rider, L. D., Methodist Hospital, Omaha.
Russell, R. S., University Hospital, Omaha.
Scoins, Wm. H., Methodist Hospital, Omaha.
Scott, J. W., U. S. Public Health Service.
Shaw, W. J., Kansas City General Hospital, Kansas City, Mo.
Smith, A. H., St. Lukes Hospital, Denver, Colo.
Steven, R. A., United Hospital, Port Chester, N. Y.
Sucgang, F. P., St. Francis Hospital, Grand Island, Nebr.
Sundberg, R. H., Anker Hospital, St. Paul, Minn.
Weaver, R. L., Wise Memorial Hospital, Omaha.
Weber, J. A., Seattle City Hospital, Seattle, Wash.
Weymuller, L. E., Providence City Hospital, Providence, R. I.
Wiggins, C. W., Wise Memorial Hospital, Omaha.
Wilmoth, L. H., San Francisco General Hospital.
Worden, D. K., Murray Hospital, 57 W. Quartz St., Butte, Mont.
Wilson, D. J., Methodist Hospital, Indianapolis, Ind.
Wright, W. E., Salt Lake County Hospital, Salt Lake City, Utah.

THE SOCIETIES

Saline County Medical Society held its regular monthly meeting at Wilber the evening of June 9th.

Dr. J. E. M. Thomson, of Lincoln, delivered a most able illustrated address upon "Disability of the Feet." This was discussed by several members present. Fourteen doctors were present.

After adjournment a luncheon was served by the Wilber fellows. It was voted to hold our next regular monthly meeting at Friend, Nebr.

—H. W. Quirk, Sec.

HUMAN INTEREST TALES

Dr. W. H. Heine of Hooper has located in Fremont.

Dr. H. P. McKnight has moved from Fremont to Beatrice.

Dr. L. E. Sleeper has left Crawford to locate in Alliance.

The home of Dr. J. S. Van Keuren of Omaha was robbed recently.

Dr. J. G. Bartek, formerly of Wahoo, has recently located in South Omaha.

Dr. Harry Everett, Lincoln, returned home from a vacation in Florida recently.

Dr. and Mrs. Lucien Stark returned home from a winter in Florida in time for the meeting.

Dr. and Mrs. G. W. Fegers of Nebraska City left during May for an extended European tour.

Dr. W. R. Talboy, who was a member of the legislature this year, has returned to his home at Newcastle.

Dr. and Mrs. E. V. Neuman of Wausa, and son, left recently for an extended tour of Europe. While away, Dr. Neuman will study in Vienna.

Dr. Nora Fairchild of Omaha was elected president of the Nebraska Association of Medical Women at its annual meeting in Lincoln, May 12.

Drs. J. P. Lord, R. D. Schrock and W. P. Wherry of Omaha were on the program of the Congress of Physicians and Surgeons in Washington during May.

Dr. F. A. Long, Editor of The Nebraska State Medical Journal, left with his daughter for a two months' tour of Europe just after the annual meeting.

Dr. C. P. Fordyce of Falls City was one of Governor McMullen's official representatives at the fifth annual conference of State Parks held at Skyland, Va., in May.

Dr. J. F. McDonald and Dr. V. E. Levine of the Creighton Faculty were on the program of the mid-western division of the American Chemical Society at Iowa City recently.

Dr. and Mrs. C. D. Evans of Columbus left for an extended eastern trip the latter part of May. While away Dr. Evans attended the national meeting of the Red Cross of Constantine at Indianapolis.

Drs. W. P. Wherry, J. B. Potts, J. M. Patton, J. P. Lord of Omaha; J. S. Welch and H. J. Lehnhoff of Lincoln, and Dr. E. R. Hays of Falls City, all attended the meeting of the A. M. A. at Atlantic City.

Dr. I. S. Cutter, who leaves soon to assume his new duties as Dean of the Northwestern Medical College, Chicago, was given a farewell dinner recently at Lincoln by the pre-medic students of the university.

THE NEBRASKA STATE MEDICAL JOURNAL
ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION
Vol. X. Norfolk, Nebraska, August, 1925 No. 8

CONTENTS

Address on Medicine, Lucien Stark, M. D. 281
Athletics and Competitive Athletics Versus Sound Physiological Principles, Inez C. Philbrick, A. M., M. D. 284
Modern Aspects of Nutrition—The Pathology of Malnutrition. 6. Faulty Food and Bodily Strength, Victor E. Levine, M. A., Ph. D. 290
Angina Pectoris, W. W. Arrasmith, M. D. 294
Choice of Operation in Peptic Ulcer, L. D. McGuire, M. D. 297
Artificial Pneumothorax in Medicine, M. C. Howard, M. D. 302
Hemophilia—An Interesting Case, A. A. Conrad, M. D. 305
Studies in Atypical Tabes Dorsalis, With Leading Points on Diagnosis, A. E. Bennett, M. D. 310
Progress in Obstetrics, W. C. Becker, M. A., M. D. 315

EDITORIALS—

The Family Doctor 318
Teaching the Public, A Professional Duty 318
The Defense Committee 319
Lengthening Human Life 319
Fractures 320
The Annual Meeting of the Nebraska Association of Medical Women 321
American Board of Otolaryngology 323
American Electrotherapeutic Association 323
Society Notes 323
Human Interest Tales 323
Necrological 324

ADDRESS ON MEDICINE

Lucien Stark, M. D., Hartington, Nebraska

Gentlemen: The Oration on Medicine this year I do not believe will amount to a great deal, other than this: We want to call attention to a few things that in the crash of matter and wreck of worlds have been lost sight of. I refer to the consideration of normal physiology.

A great many of our surgeons and medical men at this time are rather departing from the continued search for pathological conditions into those of physiology.

This paper is offered with apologies to you, and its author just wants to stimulate a little bit of interest in a study of things of common interest to all of us.

In taking up a subject for the oration on medicine for this year I know full well the absolute impossibility of covering, save in the most meager way, the many advances made during the year. I fully appreciate that many of the things that are classified as new are but a rehash of many of those things that are not new but things that are presented in a different way and from a different viewpoint.

The large and constantly increasing number of gastro-intestinal disorders which are seen by all of us every day, compel us to believe that some method of simplifying their diagnosis and treatment would be of greater value than a touch here and there on many different subjects. This paper will not contain anything new or startling and will bring to you few, if any, conclusions, but will try and set these things out at a different angle in the hope that it will stimulate study along a line that I, personally, believe will be of benefit as the many ramifications are worked out and collaborated.

As, in my own mind, the practice of medicine consists of drainage and repair, I can think of no better place to attempt the application of that principle than in the treatment of the greater number of our cases of gastro-intestinal disorders. When I use the term drainage, I mean it in its broadest sense rather than to restrict it to any one organ or part of the individual. Eliminating accidents, obstetrics and things of that nature, most of our effort along therapeutic lines is directed to the establishment of drainage. Our ancient brethren recognized this principle when they administered the old ten, ten and ten mixture and then bled the patient until he fainted. Their idea was to drain away everything that might possibly do damage and then start over again provided there was anything left to start with. In the light of later day medicine, they were right except the extreme to which the idea was carried.

In our own instance, with our cases showing intestinal disorder, our first efforts are to establish drainage as thoroughly and as rapidly as possible and it is attained in great part through the gut itself. Our most sensible treatment of pneumonia is but an effort to eliminate and neutralize toxines, liquify mucous and products of inflammation in order that drainage can be effected. Our cases of meningitis get a lumbar puncture, primarily to make a diagnosis but also to establish some small amount of drainage and in that way reduce the intraspinal pressure. The bulk of our surgery save in plastic and reconstructive work is but an effort to establish drainage of some sort. Our eye, ear, nose and throat men, aside from correcting errors of development, spend the greater part of their lives in an effort to establish proper drainage where it rightfully belongs. Even our Neuro-Psychiatrists place their patients in some institution where all the associated ideas responsible for their mental infirmity can be broken up, that they be given a mental cathartic, so to speak, and then by a process of re-education start them all over again.

This idea has been the salvation of many psychiatric patients who, without this mental catharsis and drainage, would have ultimately become mental wrecks. The wonderful work of Alverez and others in establishing the polarity of the various segments of intestine, is just a different way of presenting the idea of drainage with a more rational and scientific basis than was used by our older men. We believe that at least 80% of our gastro-intestinal cases or to put it a little better, 80% of the patients coming to us complaining of gastro-intestinal symptoms, originate in the motor function of that tract rather than any other point. That is to say that their difficulties are not in the chemical plants that act upon the food but rather in keeping the food in motion throughout the length of the tract.

According to Alverez the cardiac end of the stomach is positive to the pylorus' negative and in turn the pylorus is positive to the duodenum negative and so on down the entire length of intestine. The part higher up is normally positive to the lower point's negative with the greatest positive polarity at the cardiac end of the stomach, so, therefore, our contraction impulse normally travels from above down and from positive to negative, following the polarity of the various segments of intestine. When we have a reversal of polarity as happens in vomiting our pylorus becomes positive to the cardiac end's negative and when the normal polarity is reestablished, our vomiting ceases. The greatest cause of a reversal of polarity must be then due to interference with the motor appartus of the tract with a resultant stagnation of the contents of that particular section of gut. It may begin fairly low down and then gradually work its way up so that we could have a complete reversal of the entire tract.

We can in a measure liken the gastro-intestinal tract to a large and well systematized manufacturing plant in the manufacture of its product. We have, first a receiving station for raw materials, viz: the mouth. An endless chain conveying those raw materials to the stomach or storage house, the oesophagus. In the stomach, the first action of a chemical plant takes place and then, if the system co-ordinates perfectly, our impulse traveling from positive to negative carries this treated raw material out through the pylorus into the duodenum. The acid content of the stomach produces the relaxation necessary in the pylorus and the duodenal chemical plant being alkaline finally neutralizes the acidified raw material and the pylorus closes. Following the action of the chemical plant in the duodenum our raw material, twice treated, passes the opening of the common bile duct and another chemical plant does the work intended by nature for it to do and so on down the entire length of intestine, each chemical plant doing its work and each absorptive area taking its toll from what was once raw material. Finally our material has traversed the entire length of gut, and that part of it necessary for the operation of the human organism having been absorbed, we have left only waste which is deposited in the rectum from which point it is drained. So on the journey through the gastro-intestinal tract, our solutions, and nothing can be absorbed until it is first put into solution, have all been made by the various chemical plants adjacent to the intestine and the motor apparatus has carried it all through without incident or accident. To my mind, our greatest problem is to keep our material in motion as any one of the chemical plants is capable and will take upon itself part or all of the work of the rest and our chemical plants are the least liable to injury of any part of the gastro-intestinal apparatus.

The greatest liability of damage to them comes from interference with the motor part of the machinery, daming up their product, interfering with their function and causing them to undergo dilitation and injury of various kinds. It is a process so analagous to the assembling of a Ford that we wish to cite in this way: In a Ford plant a piece of raw material is attached to a conveyor belt and as it goes along, a workman attaches a wheel, another, another wheel, another the body, another the engine and so on until you come to the end of the process, when you have a complete Ford with a certain amount of waste which is disposed of as waste. If one workman does not do his part, another can but the conveyor must never be allowed to stop as it carries its load past the various points where work must be done in order to complete the process. The method of nourishing the human organism can be based upon the same mechanical idea by applying it slightly differently. We have a reservoir at one end of the gastro-intestinal tract containing the raw material with a certain amount put into solution as it passes each chemical plant, absorption taking place all along the line as the various solutions are made and for an end product we have the nutrition of the individual plus waste which is disposed of by natural drainage. So long as this process follows the natural route, everything goes well, but when we have any impairment of any of our functions, our troubles begin. As already stated, there is but little can happen to our chemical plants as old Dame Nature has them safeguarded and protected on every side and their chemicals will be contributed just so long as they are needed and the plant is not too greatly interfered with. About the only way that these plants can be damaged aside from actual violence, is when something interferes with the motor function of our machinery and our plant cannot properly dispose of its product.

When our motor apparatus does not properly functionate what happens? We have our nourishment plant already to do its work and our conveyor as represented by the motor apparatus fails, our material stops wherever it happens to be. If it remains there any length of time, the polarity of our segment of gut is reversed and our material begins to travel in the wrong direction. If it continues to remain there, we have through mechanical irritation alone, an active inflammatory process which progresses with the lapse of time. Pathogenic organisms put in their appearance and we have an infection added to what was merely a mechanical inflammatory process. The motor machinery tries to do its work but cannot without outside assistance and the tissue damage shows actual pathology resultant from what was a functional breakdown.

Our case is then no longer a functional case except as the restoration of function is necessary following the drainage and repair of the actual pathologic lesion produced. So we feel that the majority of our gastro-intestinal cases have their origin somewhere in the impairment of the motor function of that particular tract and that in addition to the repair of the actual pathology left, we should never neglect, in so for as possible, the restoration of the function of that segment of gut. We believe that the causes of these breakdowns can be properly classified under the heads of direct and indirect and under the direct causes we would place a certain type of obstruction rather than to name all the things that might possibly be guilty. First: We would place ileus from any cause. Second: Improper diet in that the patient does not get enough roughage to form a bolus of food capable of exciting the gut to contraction. Third: A general lack of muscle irritability as in people of advanced years. Fourth: Interference with the nerve supply direct such as a complete paralysis or a partial one. Fifth: Adhesions between separate gut walls so that there will be but a limited area of contractility.

Under the head of indirect or reflex causes we can place all those derangements within the belly itself which are capable of producing symptoms in the gastro-intestinal tract such as Appendicitis, Gall Bladder disease, severe heart lesions, syphilis, gastro- and entero-optosis, focal infections, the interference produced by gastro-enterostomy and the various neuroses, as shock from some catastrophy or any of the many things listed in the text books as gastro-neuroses. Many of these things can be easily remedied by proper therapeutics and the balance of the motor function again restored, and with the restoration of the motor function, any impairment of the chemical plants will at least be given the greatest opportunity to return to normal that they could get in any way at our command.

All this brings back to us the necessity for drainage and motion. There must always be progress or retrogression as there is no stopping point. It is as true, if not more so in the gastro-intestinal tract of an individual as in the individual himself. You are either going ahead or back and the motor apparatus that keeps up the forward progressive motion must be kept in as nearly perfect condition as is possible for us to do. The chemical plants are protected and safeguarded in every way and there is but little that can impair their usefulness so that we believe that the percentage of gastro-intestinal disturbances arising from disease directly affecting them is very small but the amount of trouble that can be caused in them and the individual by any impairment of the motor function constitutes the great problem in the treatment of gastro-intestinal affections.

There is a wonderful field of work along this line and a great deal of it to be done as it is hardly started, but if we will all bear in mind that our world is kept in motion by some sort of motor function and that its surface is uneven in order that it may be drained and waste disposed of, we will have a very good basic idea for the treatment and diagnosis of many conditions now obscured because of the loss of sight of the necessity of motor function.

ATHLETICS AND COMPETITIVE ATHLETICS VERSUS SOUND PHYSIOLOGICAL PRINCIPLES*

Inez C. Philbrick, A. M., M. D.

The opinions expressed in this paper have grown out of an experience of twenty years of more or less examination of school children, high school girls, and college young women, in case of the two latter classes to determine fitness or unfitness for physical education courses. To confirm and add weight to these opinions, I have pretty thoroughly glimpsed recent literature bearing upon physical education from many points of view.

For this opportunity to thus fully review the literature of the subject, I am especially indebted to Misses Madaline Hillis and Beulah Evans of the Library of the University of Nebraska College of Medicine; Misses Lulu Horne and Maud Montgomery, of the Lincoln City Library; and the John Crerar Library of Chicago.

This paper is not alone a protest against athleticism (intemperance in athletics) — it is a protest against athletics, and especially competitive athletics, as required or allowed parts of any school or college program. In the beginning, let me define the terms athletics and gymnastics. Athletics, according to Standard definition, are feats of strength and skill for themselves alone, as running, rowing, jumping, weight-throwing; or feats of strength in the form of athletic games, as soccer football, football, basketball. Gymnastics are disciplinary exercises to develop strength and skill. Athletics are physically destructive, while gymnastics are constructive in nature. Far from opposing gymnastics, I rejoice in the present tendency amongst wise leaders in physical education to make them a more and more prominent part of the physical education program, from kindergarten through college; out of doors wherever and whenever possible, which one authority assures us is possible throughout the year in 85% of the schools of the country. My opposition is directed solely against feats and games that depend upon strength, speed, and endurance.

The question of including, or omitting athletics and competitive athletics from our school programs, is, at bottom, a question of human physiology. To my mind, right decision in this matter is of greater importance to the acceptedly normal child than to the acceptedly abnormal child; and of greater importance as regards health in middle age, and longevity, than as regards immediate effects. In our large school systems, with medical examiners determining fitness or unfitness for physical education courses, seldom, theoretically speaking, will children with obvious diseases or defect be allowed to take part in athletics or athletic games. Whether such children are as safeguarded in practice as they are in theory depends, of course, upon the soundness of the medical judgment to which decision is left. In this connection it must be remembered that only about 2,000,000 children out of 25,000,000 are provided with gymnasia and medical examiners, that the vast majority are under none, or only cursory medical supervision.

---

*Read at the Annual Meeting of the Nebraska State Medical Society, May 14, 1925.

A questionnaire sent to ten leading school systems of the country, with thus far seven returns, reveals a lack of definite medical standards of unfitness for athletics: to quote, in New York schools, "any condition which, in the opinion of the medical examiner, or private physician, would jeopardize the health of the child"; in Washington, D. C., schools, "any serious permanent affliction, or a certificate from the child's family physician"; in Denver schools, "pupils with extreme heart cases or lung difficulity"; in Kansas City schools, "cardiac lesions, organic or functional; any chest condition; 10% or more underweight". To my mind, Kansas City, in excluding from athletics underweights, and cases of functional heart, is approaching a rational standard. The Lincoln schools, which rank among the first in the country in the quality of their health supervision, due largely to the indefatigable labors and wise leadership of Dr. Katherine H. K. Wolfe, for seven years supervisor of school health, exclude from athletics not only marked underweights, and children with functional heart murmurs, but also those with obvious goitre, and with pulse rates of 140 or above after the heart efficiency test — running in place one hundred steps. At the University of Nebraska, where I have during the past six years, with the help of Dr. Ruth Warner, and Miss Irene Dykema, examined all young women registering for physical education, several hundred each year, I am now advising reprieves for not only those students presenting one or more of the above conditions, but also, for those giving a history of comparatively recent and continued contact with a case of tuberculosis; those giving a history of heart affection following infection, although apparently recovered from; those decidedly anemic; those a year or two under the average age of entrance, that is, those 15 and 16 years of age; those decidedly over-weight; those showing albuminuria, where apparently functional; and, especially, those giving a history of not having stood up under such exercise in the past. Dr. D. C. Parmenter, of Harvard, lists as criteria enabling one to pick out beforehand men who easily grow stale, variable pulse, labile blood pressure, albuminuria, functional systolic murmurs, poor posture, and a tendency to become easily disturbed or nervous.

It is interesting to note that some leaders in physical education are relinquishing former claims as to the subnormal child. Dr. John Sundwall, of Michigan University, in a paper read before the Conference on School Health, held under the auspices of the American Public Health Association, 1923, confesses that physical education can do little for the subnormal child, and says farther, "Indeed we have learned that there are many factors which are of even greater importance in the maintenance of health than daily exercise". Dr. William R. P. Emerson, in his work on undernutrition in children, has demonstrated the fact that one cannot correct fatigue postures by exercise, or cannot by exercise bring up to weight the undernourished child. Anyone with a grasp upon fundamental physiological principles, recognizes the truth of the statement of Sir James MacKenzie, proved in his experience — that it is more harmful to expose to strain the functional heart, than the heart with a well-compensated mitral lesion. So much as to the admittedly abnormal child.

We could hardly expect to find athletics, and competitive athletics discussed from the premise of physiological principles by directors of physical education; but we could and should expect such discussion from well-trained physicians. In all my reading, I have not found one medical authority adequately discussing athletics and competitive athletics in view of the physiology of the acceptedly normal child; of the physiology of growth; of the inherent evils of athletic and competitive athletics, as related to growth; of fatigue; of the immediate effects of athletics and competitive athletics on the growing child and adolescent, as related to health in middle age, and longevity. If anywhere, we might expect to find such adequate discussion in the Report of the Joint Committee of the N. E. A. and the A. M. A., 1924, on Health Problems in Education, considering that on its committee, and sub-committee, from the A. M. A., are such men as Haven Emerson, Professor of Public Health at Columbia; Walter B. Cannon, Professor of Physiology at Harvard; John Dodson, formerly Professor of Pediatrics at Chicago University. But we do not find it. We do find athletics classed with games and sports as, "affording the best type of exercise, both in respect to physiological effects and the formation of social qualities".

I believe the following statements to be incontrovertible — they have the authority of constant statement by physiologists — that growth is a period of greatly heightened metabolism, putting a severe burden especially upon heart and kidneys; that growth is accompanied always by a moderate hemoglobinemia, the blood-making organs being unequal to the demands upon them; that during growth there is general nerve and muscle irritability and weakness, with lack of vasomotor tone in tissues and organs; that immature nerve tissue and muscle are far more liable to injury than are mature; that the proverbial laziness of growing children and adolescents, when not stimulated to activity, is the reaction to fatigue, nature's danger signal, warning against over-activity. I will add, as a logical induction from the foregoing, that the strain of growth should not be increased by the strain of athletic activities; and that, in addition, to allow the stimulation of competitive activities, is to impose an intolerable burden.

I am aware that some of these statements are incapable of laboratory demonstration. Professor Frederick Lee, of Columbia University, states that there are no reliable laboratory tests for ordinary fatigue, such as that from a fourteen mile walk; that cardiovascular reactions show only degenerative changes in muscle; but assumes that "the fatigued body is in a very different chemical, and, perhaps, physical state from the unfatigued body, and that to restore it to the non-fatigued condition there are needed profound chemical, and, perhaps, physical changes".

Professor Atzler, of Berlin, from his investigations into the physiology of industry, confirms the statements of Professor Lee. We have authoritative medical statements to the effect that in acceptedly normal children there are physiological factors that cannot be pre-determined, as to their ability to stand up under athletics; that "race, physical development, height, and weight, have no bearing on frequency of collapse".

In 110 normal children put through athletic stunts by Drs. Max and Grete Seham, of the University of Minnesota, the children being all up to weight, of good muscular development, nine to fifteen years of age, there were sixteen cases of collapse in twelve children, this collapse attended by one or more of the following symptoms, dyspnoea, profuse perspiration, nausea, chills, tremors.

In the studies of the physiology of industry, practically studies of fatigue, begun because of the necessities of the World War, in England, the United States, Germany, France, Belgium, Spain, Italy, Sweden, and Canada, and since continued, there have been discovered many facts as to the physiology of the working body which apply forcefully to the school activities of children and adolescents; to wit, insistance upon the all-importance of rest, the necessity of pure air, the danger from excessive speed and drive, the depressing effect of monotony, method of work as adapted to ease of performance, etc.

Far more pernicious than athletics is competition in athletics, which stimulates the already over-burdened body to otherwise impossible exertions, and induces severe mental strain. Competition makes work of what should be recreation. Says P. K. Holmes, of Lexington College, "Football and basketball, as played in college today, are far from recreation". Said Walter Camp, of high school athletics, a year before his too early death at sixty-five, of sudden heart collapse, "Many a high school athlete is burned out. He did all they asked him, and they asked too much. Fine, willing boys are being burned out by over-play, being driven too hard, and too fast". "We have gotten away from the spirit of play", says William J. Monilaw, M. D., Physical Director University of Chicago High and Elementary Schools. Out of his vast experience, Dr. Dudley Sargent warns against the competitive strain and tension in various forms of college athletics. Dr. D. C. Parmenter, of Harvard, calls attention to the especial danger of competition for the college student, because of the tremendous college enthusiasm, and the mental work he has to do besides.

A most dangerous feature of competitive athletics is the training down, to which many teams are subjected. A. J. Carlson warns against this practice, excepting for overweights; and M. J. Monilaw calls attention to the danger of lowered resistance to disease therefrom, citing consequent deaths in his own experience.

There are, I am confident, few medical disciples of Ponce de Leon, or Steinach, self-deluded or charlatans, who think to push senility ever farther into the future, through magic waters or miraculous operations. We accept the oncome of senility, whether at seventy or later, with philosophy, regarding it as the inevitable result of the wear and tear of the human machine; and when premature, the result of this necessary wear and tear plus the effects of infections and poisons. In other words, natural senility is the result of prolonged irritation by products of fatigue — not specific fatigue poisons, as recent authoritative studies upon fatigue would indicate, but lactic and butyric acids, carbon dioxide, certain potassium salts, certain products of proteid decomposition — skatol, phenol, indol (N. W. Rakestraw, Stanford University, 1921). In light of these facts, is it reasonable to assume that putting additional physical and mental strain upon children and adolescents through ten or more years, will not perceptibly shorten the period of functional efficiency?

In our endeavor to escape the conclusions of reason, we invoke the possibilities of repair in the growing body for protection of the children and adolescents from permanent ill effects due to mental and physical strain. L. Emmet Holt recently wrote that "outgrowing abnormal functional conditions, of which we see such a multitude in children, is natural and easy to understand", and calls attention to the extent to which the lesions resulting from serious organic disease in early life may disappear as a consequence of time and growth, basing his conclusions upon disappearance of clinical symptoms, and demonstrable enlargement, by present-day methods of measurement, in three cases of organic heart disease. However, he makes this most pregnant concession in his statement "that he does not suppose that in any of these patients there was complete anatomic recovery". And if not anatomic, then certainly not physiologic, as physiology is determined by anatomy. And I ask, granted that possibilities of repair in the growing body may in part counteract the evil results of over-strain, are we, therefore, justified in imposing strain sufficient to induce ill effects?

The attitude of the medical profession on the relation between strain of athletics and competitive athletics, and health in middle age and longevity, is various. Discussion naturally focusses upon heart damage as related to deaths from heart failure in middle life. We have such imposing testimony as that given in the extensive symposium in the New York Times, February 4, 1912. The — then Surgeon General of the Navy, Stokes, declared that "athletic overwork has a decidedly harmful influence on the after-health of seamen". Dr. Estes, Physiologist at Lehigh University, cited cases of injuries from athletics "sometimes so severe and extensive as to at once terminate the usefulness of the youngster as an athlete, and require months for proper re-compensation". I ask, is it reasonable to predicate entire tissue recovery from such lesions? Several Masters of Boys Schools in England testified to "much permanent damage and a few deaths" from long distance running. More recently Harlow Brooks states that his experience in examining applicants for the National Guard Regiments, largely composed of ex-college men, has led to the conclusion that athletic stars are below the health standard of average college men.

On the other hand, W. G. Anderson, Supervisor of athletics at Yale, in this symposium gave favorable statistics as to the longevity of Yale boating crews; as also did recently W. Edgecombe, M. D., M. R. C. R., F. R. C. S., of English boating crews. It is to be remembered in this connection that boating crews are picked men, who train every year arduously for months, for twenty minutes of glory or defeat. A photograph in the New York Times this May 10th, is a convincing object lesson on competitive athletics to the rational and understanding individual — two boats alongside, the crew of the defeated Boston Tech. in all stages of extreme collapse, with the faces of the victorious Syracuse Eight grinning upon them from their boat!

Asks A. T. Renner, M. D., "Why this astounding high percentage of sudden deaths from heart failure, and the reprehensible figures of increasing cardiacs? It would be neglectful to ignore the stress and strain of present-day civilization, which in their cumulative effect, undoubtedly play a great part in the production of heart degeneration".

In Craig's recent "Diseases of Middle Life" — an acceptedly authoritative work, I have found but two helpful hints. In the chapter on "Muscular Exercise in Middle Life", James H. McCurdy, A. M., M. D., Editor of the Physical Education Review, writes, "A maturing child needs careful watching x x x failure to mature properly during adolescence helps lay the foundation for ill health after 40". And in the chapter on "Diseases of the Heart", in discussing myocardial degeneration, James E. Talley, M. D., Professor of Cardiology in the Graduate School of the University of Pennsylvania, makes only this one allusion to the effects of physical and mental strain, "An occupation in which there is an amount of exertion which taxes the damaged heart will have to be changed" — not a word as to the etiological significance of strain.

Vital statistics show that deaths from heart failure in middle life are increasing by leaps and bounds. In the U. S. Registration Area, in 1922, diseases of heart (all ages) constituted 14% of deaths; influenza and pneumonia, 11.3%; tuberculosis, 5.2%. In 100,000 of population in 1922, there were 40.4 deaths from pneumonia, 55.7 from cerebral hemorrhage, 104.2 from heart disease. So aroused is the profession by the fact of the high and rapidly increasing rate of cardiac deaths that there have been formed a National Association, and several state and local associations, for the prevention of heart disease. Much investigation as to infections as causative factors is under way, and there has been much medical writing upon the subject. Cardiac clinics, free and pay, are being established. Certain employers of labor, are, in so far as possible, adapting work to cardiac capacity. But as regards present professional interest in the relation between physical and mental strain in childhood and adolescence, and later health and longevity, there is practically none. Replies to letters sent to five of the old line insurance companies of the country state that they do not discriminate against college athletes, while they do against certain professional athletes. This policy reveals the attitude of their medical directors.

We hear much these days of "rational athletics"! I deny the possibility of "rational athletics". As corroborative of my position, let me instance the fact of the author of a book on "Rational Athletics" (Frederick J. Reilly) stating that "the fundamental purpose of the Public Schools Athletic League is to stimulate the boy who is physically below the average; and the best manner in which this can be done is by competitive exercise". And again, let me quote his statement that rational athletics consists in having every boy and girl consciously training for an under class meet, or an individual championship. And again, let me instance his confession that while a corps of men, himself one, were able to go through the program of events for an 8B class, they were lame and sore for several days thereafter. Certainly the title of the book is a misnomer. Witness again to the irrational nature of the position of the proponents of athletics. Dr. McCurdy's statement that "the adolescent age is the nascent period for the development of strength, speed, skill, and coordination of the small with the big muscles", this in contravention of the physiological fact that speed, and fine muscle co-ordination, are exceedingly exhausting nervously.

Enthusiasm of the medical profession for disease, patients, and fees, is thoroughly ingrained; its eyes have never fully been opened to its responsibilities in the field of preventive medicine, a most important part of which is school health supervision, a most important part of which is supervision of physical activities. Apparently many physicians feel that they have fulfilled their responsibilities as regards athletics by seeing that every football field is manned by surgeons with first aid equipment; or, as reported of a recent athletic event, by providing "careful medical measures, consisting in surgeons with special equipment, stationed all along the trail of the contest".

The field of school health supervision belongs responsibly to a scientifically-trained medical profession; and there has never been greater opportunity or need for sound, sane, medical supervision in this field than here and now. Just as through professional apathy and short-sightedness, a large part of the field of ameliorative medicine has been appropriated by mechanico-therapeutists of various name, to the detriment of profession and patients, just so surely, unless the profession awakens to its responsibilities, will this most important field of school health supervision pass from under medical control, to the detriment of present and future health of the now children and adolescents, and the loss to the profession of a wide field of usefulness. And, on the other hand, the highest aims of directors of physical education cannot be fulfilled without enlightened and dynamic medical co-operation. Without this, physical education can but stumble and blunder toward a more rational program.

There is in this country today an organized movement for the unification of all school health activities under the supervision of directors of physical education. A statement in the report of a recent conference of the A. P. H. A. is quoted with approval by Taliaferro Clark, Medical Officer in charge of Field Investigations in Child Hygiene, A. P. H. S., "In an ideal plan one director should be responsible for the organization and the coordination of all health services, such as (a) medical inspection, (b) physical education, (c) sanitary supervision, (d) teaching of personal hygiene. However, he disagrees with the conclusions of the report, to-wit, that the supervisor should be a director of physical education. Michigan University is now training such to-be supervisors. the course of study leading to the degree B. E.. as outlined by Dr. John Sundwall, promising a combination of general scientist, pedagogue, anatomist, physiologist, and hygienist. The aim is apparently a paragon; but I am very doubtful of such diversified talents fitting for effective health work. Already two of our cities, and perhaps others of which I do not know, have given over supervision of their school health activities to directors of physical education — Denver and Rochester, N. Y.

Physical Education is today in an aggressive mood, with, in its highest expression, an ambitious program of perfection, as stated by the National Physical Education Service, to be. "the altruistic aim of universal right physical training in all the schools of the Republic". Physical Education no longer rests its justification for athletic games upon their being, to quote the words of Professor George E. Johnson, of Harvard, "Expressions of loyalty, to maintain the dignity and honor of the college." Its present-day slogan is "Back to the body", again resting its claims to recognition upon physical benefits to be vouchsafed. Its present attitude is doubtless due, on the one hand, to the revelations of the war, as to the "pathetic" physical condition of a large percentage of the recruits, many of them, as Major Palmer E. Pierce points out, from institutions with highly developed athletic activities; and, on the other hand, to a grossly exaggerated idea of the possibilities in their field.

The digest of twenty-five physical education laws passed since the war, putting physical education courses into the schools, gives evidence of the lay and physical education origin of these laws. In most of them there is no specific reference to medical inspection. Under purpose and scope the terminology is that of the College Directors of Physical Education Courses, which is a woman's organization, and has, I have heard it rumored, showed signs of rebellion against usual and accepted domination by men's organizations, promising somewhat less of exploitation of our young women and future mothers. Only two of these laws, California and New Jersey, mention specifically physical fitness of pupils. The New Jersey law is the only one stating specifically that physical fitness shall be determined by medical inspectors. Where character of supervision is stated, in seven states it is given over to directors of physical education; in four, to educational authorities; and in one, that of Utah, to the State Director of Health. Authority to establish courses is by three laws given to educational authorities; by one, to directors of physical education; and by one, Utah, to a representative committee, its chairman the State Director of Health, and the Dean of the State University School of Medicine, a member.

I have, in this paper, tried, by quotation from authorities, to truthfully present the attitude on this most important subject, of medical profession, and directors of physical education.

To my mind we need in the profession today fewer "rule of thumb" physicians, and far more of those endowed with scientific imagination, capable of seeing with the mind's eye things that cannot be measured, and weighed, and rayed.

In closing let me quote with approval a recent statement in the Outlook, by a prominent ex-college athlete (one of five to at-one-time win the Western Intercollegiate cup in long-distance running, Newton A. Fuessle): "All this loud and clamorous demand on the part of the American public for hard exercise makes me tired. What the country needs is rest." And I add, what, in my opinion, the American child and adolescent need, more than anything else, is rest, sleep, and freedom from physical and mental strain.

MODERN ASPECTS OF NUTRITION

THE PATHOLOGY OF MALNUTRITION

6. Faulty Food and Bodily Strength.

Victor E. Levine, M. A., Ph. D.,
Professor of Biological Chemistry and Nutrition, College of Medicine,
Creighton University, Omaha, Nebraska.

INTRODUCTION

In the preceding paper we undertook a discussion of the effect of food inadequacies upon the individual glands of the hormone-producing or endocrine system. We recounted the deterioration caused by faulty nutrition in the thymus, the thyroid, the parathyroid, the adrenals, the pancreas, the testes, and the ovaries. The fact that we failed to mention the hypophysis does by no means signify that this gland remains intact or that no work has been done with reference to it. But very recently Sedlezky(1) published his findings. This investigator has observed that the developing human hypophysis, as well as the fully developed one, underwent, as a result of chronic inanition, a loss in weight of the organ as a whole, a reduction in eosinophilic cells, an increase in colloid, and a hypoplasia of the glandular portion. Necrosis was evident in the pars anterior, as well as hyperemia, and an increase in the basophilic cells.

The pathological changes occurring in the endocrine glands as a result of malnutrition may give rise to lowered production of heat, and consequently to subnormal temperature, to lack of vigor, to complete interruption of the growth process or a delay therein, and to lessened fertility or even sterility. The effect of diet on sex was well illustrated during the last war, when the people of Europe were put on restricted rations. According to the German authorities(2), the war diet tended to produce a cessation of the menses. This fact Rubner(3) attributed to the great reduction in the protein content of the diet. Amenorrhea set in as a protective factor, when the protein in the diet just barely maintained nitrogen equilibrium or fell below it.

Interesting facts have also been brought out with reference to the male. The reduced dietary regime tended to diminish the libido sexualis. It is remarkable, indeed, how a modern nutritional viewpoint possessed by an investigator adds untold riches to his research. Thus, Stefko(4) has presented very interesting evidence from a study of many hundred starved children that the excessive number of cases of cryptorchism in boys undernourished is due to secondary ascent of the testes. This ascent is caused by atrophy of the cremaster muscle, which takes place along with the general underdevelopment of the abdominal musculature.

Summing up, we may say that malnutrition brings about a general lowering of the metabolic processes and the consequent development of a state of biologic fitness short of optimal. As a matter of fact, the problem of physical efficiency is so important a subject from many aspects, especially physiological and sociological ones, that the writer feels an urge to digress before taking up, as was announced at the end of the last paper, the more technical question of faulty food with relation to intermediate metabolism.

MUSCULAR WEAKNESS AND MALNUTRITION

One of the easily demonstrable results of sub-optimal nutrition is general weakness, lassitude, and poor musculature. To quote from Graham Lusk(5): "There is no doubt that the well-nourished individual feels a zest for his work, while the under-nourished tries to avoid all work. Walking gives no pleasure to an underfed seamstress nor golf to a half-starved professor". What Lusk says of undernutrition is also true of any type of nutrition, which, although adequate from the standpoint of calories, nevertheless falls short of what are considered today the requirements of a properly balanced diet.

What improper eating can accomplish by way of deterioration can be sensed from a brief survey of the symptoms of some of the well recognized deficiency diseases. In latent scurvy the earliest symptoms are those of loss of weight, with languor, lassitude, dizziness on standing, and fatigue on the slightest exertion. Keith and Mitchell(6) investigated the relation of exercise to dietary deficiencies. They were able to demonstrate with diets lacking vitamin A, that exercise hastened the appearance of symptoms of deficiency disease, and also hastened the death of young animals.

At the onset of beri-beri the patient usually for several days or weeks experiences a heaviness of the legs, an increasing inability and indisposition to walk. The calves of the legs are the muscles most commonly involved first. These muscles feel stiff, and often give rise to pain when squeezed. As the disease progresses the nerves affected begin to reflect degeneration and weakness of the muscles they supply. As the muscles of the lower extremities begin to show greater deterioration, the gait becomes impaired. Toe drop may develop, and an ataxic gait. A positive Romberg sign may be present in a considerable number of cases. In still more advanced cases, the individual merely shuffles about with the help of a cane, or may finally be unable to walk at all.

In rickets, the thinness, atony and flabbiness of the muscular system are of great significance. The muscles of the neck and back become too weak to hold the head erect, and functional curvatures of the spine may be the result. The so-called pot-belly is the outcome of abdominal distension occasioned in part by the weakness of the abdominal musculature. The arms and legs display flabby muscles incapable of supporting the child in attempts at use. The muscles of the feet are weak, and do not support the arches.

Pellagra is another disease in which the most nearly constant and perhaps earliest subjective symptoms are diminution in strength, and a sense of weakness in the legs. These feelings of waning power may not be of an intensity sufficient to register in the mind of the patient himself. In other cases, however, they may be for a long time the sole complaint of the patient, who experiences an increasingly greater effort in attending to his usual duties.

Williams⁽⁷⁾ reported that undernutrition diminishes muscular force. Jansen⁽⁸⁾ and also Iltzhofer⁽⁹⁾ made similar observations. F. G. Benedict⁽¹⁰⁾ investigated the effect of undernutrition on college students. The general physical reaction of the men to lowered food intake is quite interesting. Feelings of general weakness and tiredness prevailed, which in the language of the campus spelled "lack of pep". Weakness of the legs and unpleasant sensations of fatigue, particularly in stair-climbing, were not unusual symptoms. It seemed that more than ordinary energy was required to accomplish a given amount of work. It became necessary for the individual to urge himself more than ever before. The students subjected to Benedict's experimental dietary showed subnormal gymnasium and athletic performance. They were unable to continue the rapid calisthenics or to do heavy apparatus work for the required length of time and with the usual inward satisfaction. Nor were they effective in calling forth sudden outbursts of energy. A spectator in the gymnasium observing the doings of Benedict's subjects could readily distinguish them from the others by their lack of physical power. The work of the several investigators mentioned leaves no room to doubt the fact that undernutrition lowers physical efficiency. This lowering, however, is not true for people of overweight, for Rubner⁽¹¹⁾ affirms that such people gain in efficiency as a result of underfeeding.

Fitz and Murphy⁽¹²⁾ observed that the strength of most diabetic patients is appreciatively less than normal, but can be made to approach the normal by proper diet and physical therapy. The total calories of the diet, not the fraction of carbohydrate, protein or fat, are of greatest importance in adding strength. These investigators found that the weakness was general and was not selective for any group of muscles. They advised against any dietary regime in diabetes involving undernutrition, for the weakening is out of proportion to the carbohydrate tolerance gained. Miles and Root⁽¹³⁾ have also come to the conclusion that the average diabetic is not physically fit, and that he, furthermore, responds mentally below normal to various psychological tests. With treatment and with an increase in the nutritional capacity of the diabetic, he may approach and perhaps reach a normal mentality. The experimental observations cited and others omitted for want of space impress us with the fact that physical weakness is the most common symptom of diabetes and of other diseases in which malnutrition plays a primary or secondary part.

FAULTY DIET AS A SOCIOLOGICAL AND ECONOMIC PROBLEM

Thus far we have considered only a few pathological aspects of faulty diet. We have yet to touch upon the serious impairment of the gastro-intestinal tract, of the deterioration engendered in the neurological mechanism, of the havoc played upon the kidneys and upon the heart. We have yet to show the relation of food to blood pressure changes, to circulatory stasis and edema, and to changes in blood composition suggesting anemia. In addition we have yet to point out the damage done by dietary errors to bone and teeth, to the skin, and to the organs of vision and hearing. Finally, we have yet to emphasize the surprising interrelation of improper diet and susceptibility to infection. With a knowledge of all the enervating influences of malnutrition, it does not require much contemplation to realize but too well the great social and economic significance of the problem of malnutrition.

We must remember that physical inefficiency is one of the most devastating features of undernutrition, or of nutrition adequate in calories but lacking in one or more of the dietary essentials. Instead of engaging themselves in the sport of providing entertainment or even in the more serious pastime of chasing illusory fatigue toxins, men of affairs in the realm of industry and experts in the field of industrial hygiene would do better to place greater emphasis upon the food of the worker with reference to such problems as fatigue, efficiency and labor output. It is not at all out of place to mention here some important facts brought out by McCarrison⁽¹⁴⁾. According to this investigator, the demand for food essentials appears to be greater, the greater the physical work. Experimental findings and clinical observations attest to the truth of McCarrison's statement. Thus, the onset of human beri-beri is often rendered acute, or that of hunger edema, sudden by excessive physical exertion. It is a well known fact that the incidence of such deficiency diseases as pellagra or beri-beri is greatest among those who work the hardest.

MALNUTRITION AND THE MEN IN OUR PRISONS

We have almost overlooked to mention the injustice done in some communities to the unfortunate who, through a process of lawbreaking on his part, finds himself separated from the rest of society by a term of imprisonment. The old idea of punishment for revenge is fast disappearing with the horse and buggy, the abominable derby hat, and the neighborhood midwife. The judges and juries use more discretion, more judgment and mercy than their predecessors. The modern system of pardoning presents a favorable chance for the wrong-doer to resume the path of right-doing. If we plan to return a person to the fold of human activity, is it not to be expected for the sake of social justice and also for the protection of society, that we would make a reasonable effort of returning him a better man at least physically, if not morally, so that he may be more fittingly prepared to cope with life again?

In the light of the damaging effects of malnutrition, the duty of providing an adequate diet to the tens of thousands of prisoners in our jails assumes an aspect of paramount importance. The practice of farming out food budgets, thus leaving the actual expenditure for food at the mercy or at the monetary discretion of the sheriff is a custom hanging over from the long, dead, cruel past. Yet such custom is allowed to exist in some communities in our own progressive state even almost to the very beginning of the second quarter of the twentieth century!

THE PREVALENCE OF SUBNORMAL HEALTH

We have dwelt somewhat at length upon the loss in strength, which is a characteristic symptom of diseases of nutritional inadequacy. We are well aware, however, that in this country, outside of rickets and pellagra, we need have no fear for an extensive occurrence of beri-beri, scurvy or xerophthalmia. Yet our own sense of security must not be allowed to go so far as to make us forgetful of the actual existence in our own country of borderline conditions. These do not cause us great alarm, for the damage done is cumulative, and does not immediately burst into the striking or the spectacular. Like the cankering worm, a state of malnutrition, however slight, finally burrows its way into the biologic organism with great devastation. The borderline deficiencies, that pass unnoticed by the patient as well as by the physician, are of greater aggregate importance than all the various nutritional or even non-nutritional types of disease.

That malnutrition is a prevalent condition, sapping the very life of our young nation, becomes evident when we look facts square into the face. Woodbury⁽¹⁵⁾ analyzed the influence of feeding on mortality based on data for 22,422 live born infants in eight cities. The analysis showed that artificial feeding as practiced in typical city populations is associated with a mortality between three and four times as high as that among breast-fed infants. Lust⁽¹⁶⁾ observed that tetany occurs only in 2 per cent of breastfed, but in 55.7 per cent of children fed artificially. Indeed, the number of children suffering from the primary or secondary effects of malnutrition runs into the millions.

Leete(17), of the American Child Hygiene Association, summarizes statistics with reference to our twenty million school children. Mental defectives number 1 per cent; those that are tuberculous now or have been in the past, 5 per cent; those with defective hearing, 5 per cent; those with defective sight, 25 per cent; those with diseased tonsils or adenoids, 15 to 25 per cent; those with deformed feet, 10 to 20 per cent; those with defective teeth, 15 to 25 per cent; those suffering directly from malnutrition, 15 to 25 per cent.

The physical defects in the children of the land reflect the state of affairs in our adult population. The vast number of people with gastrointestinal upsets, with tuberculosis, with bad teeth, and the great number that fall an easy prey to colds, headaches or other minor ailments as well as to serious infections or metabolic disturbances, attest to the fact that all is not well on the ship of health. The records of the War Department in the enlistments and drafts of the last war demonstrated most convincingly that a large percentage of the so-called flower of our manhood could not serve by reason of physical unfitness. This general lack of good health continues in spite of our great advances in hygiene and in sanitation. Wherein lies the cause? The fact of the matter is that we have allowed this wholesale deterioration to go on because we have failed to appreciate the importance of certain factors underlying the proper development of the individual.

McCollum(18), of Johns Hopkins, has spent many years as an investigator in the field of nutrition. As a result of intensive research this brilliant man has enriched science with many fundamental facts and underlying principles. He has been, indeed, very instrumental in raising nutrition from out of the mire of mere whim, superstition, tradition or opinion to the dignity of a young blossoming science, destined to bear fruit sustaining to the human race at large. His work does not end with the laboratory. He has gone several steps farther. Through his writings, his public lectures, his students, his contacts with groups organized for social, civic or hygienic improvement, he has finally succeeded in democratizing and socializing this knowledge of nutrition. Listen to him for a moment for an explanation of the present state of lack of physical well-being:

"If one examines the writings of those of today who are most active in studying the health problems of children and in arousing the nation to activity in their behalf, one finds various causes assigned for existing conditions. All would agree that we must attribute our physical deterioration to subjection of the human race to new and unfavorable conditions, but differences of opinion exist as to the nature and relative importance of these. The sedentary life within houses instead of out of doors; the wearing of clothing instead of exposing the skin to the weather with its changing conditions; the eating of soft cooked food instead of raw coarse food; the debilitating effects of certain climates; the preservation of weaklings through improved hygiene and care; the artificial feeding of infants instead of nursing; the burden of responsibilities of civilized life, both mental and moral, and the failure to care for the hygiene of the mouth are among the causes most prominent. Doubtless each of these plays its part in contributing to place civilized man in many parts of the world in his present unenviable position with respect to health. It can now, however, be asserted with assurance, that the chief factor responsible for human deterioration in recent times is not included in the above list. The chief factor lies in the unwise choice of food.

Our next topic of discussion will revolve about the relation of faulty food to disturbances in the acid-base equilibrium of the blood and tissues, commonly spoken of as acidosis. Under this heading we intend to emphasize a very important type of derangement in intermediate metabolism, giving rise to an acidosis of the ketonic type. In this connection we will take up the significant questions of ketolysis, ketogenesis and antiketogenesis. These latter considerations in the present state of our knowledge of medicine have an important practical bearing on treatment, especially of such diseases as diabetes and epilepsy.

BIBLIOGRAPHY

1. Sedlezky, S. K. Uber die Anderungen in der Hypophyse bein chronischen Hungern. Zeitschrift for Konstitutionslehre, 1924, 10, 356.

2. Lusk, Graham. The physiologic effect of undernutrition. Physiological Reviews, 1921, 1, 544.

3. Rubner, M. Die physiologische Bedeutung des Stickstoffs, Naturforscherversammlung, Nauheim, 1920.

4. Stefko, W. Uber das sekundare Hinaufsteigen der Hoden beim Manne wahrend der Kinderzeit Zeitschrift fur Konstitutionslehre, Berlin, 1924, 10, 289.

5. Lusk, Graham. The physiological effect of undernutrition. Physiological Reviews, 1921, 1, 538.

6. Keith, M. H. and Mitchell, H. H. Effect of exercise on vitamin requirements. American Journal of Physiology, 1923, 65, 128.

7. Williams, J. R. The effect of undernutrition on muscular force. Archives of Internal Medicine, 1917, 20, 399.

8. Jansen, W. H. Untersuchungen uber Stickstoffbilanz bei calorienarmer Ernahrung. Deutsches Archiv fur klinsche Medizin, 1917, CXXIV, 1.

9. Iltzhofer, H. Ueber den Gaswechsel nach ermudender Muskelarbeit bei kalorienarmer Ernahrung. Archiv fur Hygiene, 1919, LXXXIII, 331.

10. Benedict, F. G. Miles, W. R. Roth, P. Smith, H. M. Human vitality and efficiency under prolonged restricted diet, Carnegie Institute of Washington, 1919, publication 280.

11. Rubner, M. Der Einfluss der Kriegsverhaltnisse auf den Gesundheits-zustand im Deutschen Reich, Ein Bericht aus dem Jahre 1917 als Beitrag zur Wirkung der Hungerblockade. Munchen Medizinische Wochenschrift, 1918, Supplement to No. 8, p. 229.

12. Fitz, R. and Murphy, W. M. The muscular efficiency of patients with diabetes mellitus. Archives of Internal Medicine, 1924, 34, 402.

13. Miles, W. R. and Root, H. F. Physiologic tests applied to diabetic patients. Archives of Internal Medicine, 1922, 30, 767.

14. McCarrison, R. Studies in Deficiency Disease. Oxford Press, 1921, p. 41.

15. Woodbury, R. M. The relation between breast and artificial feeding on infant mortality. American Journal of Hygiene, 1922, 2, 668.

16. Lust, F. Die Pathogenese der Tetanie im Kindesalter. Deutsche medizinische Wochenschrift, 1913, 1087, No. 23.

17. Leete, H. L. The school's responsibility. Mother and Child. 1921, 11, 358. American Child Hygiene Association, Baltimore, Md.

18. McCollum, E. V. The Newer Knowledge of Nutrition. 1922, 2nd edition, p. 428.

ANGINA PECTORIS

W. W. Arrasmith, M. D., Grand Island, Nebraska

The actual pathology of Angina Pectoris is still in the vertex of uncertainty. There are two definite schools: (1)Those who would have us believe that the pathology lies entirely in the aorta, (2)while the others contend strongly that the pathology is an entity in sclerosed and obliterated coronary vessels. Whoever may be correct in this connection, we cannot state, as statistics are extremely conflicting. Perhaps we are prejudiced in the fact that the five cases which supplied the stimulus for this paper, without exception. gave definite clinical findings of diseased myocardium. Nevertheless, we can best arbitrate the matter by combining the two schools and assume that the syndrome is a cardio-aortic affair.

In either event, it has been definitely proven by Jonnesco(3) that resection of the left cervical sympathetic destroys the anginal syndrome. Goffey and Brown(4) find that the interruption of the paravertebral chain, the vertebral nerve, and communicating dorsal branches of the first thoracic ganglion in five cases. stop the painful attacks and inhibit the reflex spasms of the arteries of the medulla which may be the cause of sudden death in Angina Pectoris.

It is not our purpose, therefore, to offer any new information — we haven't any. It is, however, our effort to reiterate some things pertaining to the diagnosis of Angina Pectoris, which most of us have known and yet are so inclined to overlook.

When considering Angina Pectoris we conceive largely a subjective symptomatology, a syndrome, the outstanding of which is a sensation felt usually in the praecordium or epigastrium varying from an indefinite sense of fullness or constriction to a pain of a peculiarily distressing character. This is variable in its description by the patient, ranging from gripping, vice-like, crushing, to a sense of fullness or pressure which sometimes is relieved by eructation, so as to lead a large proportion of us who should know better. to ascribe the symptoms to "indigestion." "Acute Indigestion" is a headline in the press which at least to the medical profession should become a synonym for Angina. Not unoften this primary pain or distress is accompanied by an "asleep-like sickening" sensation radiating into the left neck and shoulder and the ulnar side of the left arm and more infrequently, the right. Sometimes both arms are affected throughout the innervation of the eighth cervical and the first and second dorsal nerves. The pain in the arm, if present, is extremely variable. It may be intense or merely a paresthesia. It is a common point of knowledge that the pain or numbness if perceived primarily only in the arms or neck, or the epigasrium may radiate to the praecordium. Not uncommonly these sensations are incident to a distressing anxiety, a sense of impending calamity, of imminent death.

Our patient is often cognizant of these provoking symptoms primarily after a heavy meal, or perhaps, when he is engaged in some common form of activity as mowing the lawn, walking up an incline, or against a stiff breeze. It may, on the other hand, come with emotional excitement as anger, sorrow, worry or fear. The patient in practically all instances will intuitively stand or sit still. With graver pains he MUST stand still — sometimes rigidly frozen in one position, the face ashen and expectant, the forehead studded with beads of sweat. With quickly supplied rest and perhaps several fruitful eructations of gas, or voiding a large quantity of urine, the sensation passes only to return sooner or later under similar conditions.

This is typical Angina. It is the Angina of effort and there is no physician whose name appears in a telephone Directory who has not seen it. Yet, everyone of us has been guilty of treating the "acute indigestion" or placing our suffering friend on the neurologg.

In the course of time, this syndrome originally precipitated by the mowing of the family lawn, or indulgence in a wholesome American meal, now presents itself with ever so slight and less apparent cause, as slight domestic vexations, at stool, or in the bath, until finally, unless in the meantime he drop dead without warning, our suffering bedridden man may lie for hours or even days in an almost status angionosus. This is the extreme, however, and most often the patient dies dropsical with the cardinal symptomatology of a progressively failing heart.

Sometimes, however, the very first attack may present itself while the patient is at rest; in this case, it can almost be dogmatically stated the attack is severe and is of extreme immediate prognostic significance.

It is our purpose, however, at this time to emphasize emphatically the importance of recognizing the syndrome. We believe the recognition early, of certain signs are extremely significant to the physician from a prognostic and therapeutic standpoint. We shall refer to two rather typical case histories of our series to emphasize the importance of early identification of the condition.

One of our patients, a man fifty-four, a farmer, boasted the fact that "he had never had a sick day during his entire life". Stated specifically that "for weeks his stomach prevented his indulgence in routine duties following his noonday meal. That when his stomach bothered he was compelled to stop "dead-still" at any work which he might be doing, and he always had a fear of being absent from members of the family when the attack presented itself". This man further stated that he had been promised cures by the removal of his gall-bladder, by gastroenterostomy, and last, but not least, by the injection of Bac. Acidophalis for a severe colitis. The man, within eighteen months of the onset of his angina died a typical angina death within two hours after its last onset incident to stoking his furnace.

Another of our patients, a stolid German of sixty years, states that his only trouble lies in the fact that "he has stomach trouble". That he "gets a pain in the pit of his stomach following a heavy meal". On close quizzing, we found that when he had the pain in his stomach that "his rheumatism lighted up in his left wrist and at times his left neck and shoulder were asleep". When asked regarding his work during one of these "gastro-rheumatic" attacks, he replied that "he had learned the lesson that an hour or two of rest would soon relieve his symptoms". This patient is now under observation; amyl nitrate perles stop his "indigestion and rheumatism" immediately. Bed, rest, a diet compatible with a worn-out myocardium, and a life of quietude are merely palliative measures.

A merciful Anginal exit will possibly defeat an anasarcal death. This patient had been on a well known ulcer regime, of course, with favorable results. He had also been advised that his liver was engorged and that gall-bladder surgery would relieve him of his "stomach trouble". His liver was engorged unquestionably due to an inefficient myocardium.

We are fully convinced after such observations that not infrequently angina is sadly misconstrued with all sorts of abdominal pathology. We believe further that it is not unusual for these patients to submit to superfluous abdominal surgery or misdirected medical therapy.

The individual in a typical anginal attack is a striking and characteristic picture. But in a large majority of cases we do not see our patient during his attack. In a large per cent of these cases the diagnosis reverts to a careful history. Many of these people are incapable of describing the nature of this pain or its radiation; they do not reflect upon its relation to effort; it is often only by chance that a comprehensive mental picture is elicited in the history and the true nature of the process is conceived. This is easy to understand also in the case of a foreigner handicapped by a limited knowledge of English, or the illiterate phlegmatic individual who gives a "yes and no" history.

It is more or less unnecessary to mention that the anginoid syndrome may be simulated closely in neuro-hysteric individuals, and notably by those who have had occasion to observe attacks in friends or members of the family. These pseudocrises may give more or less anxiety to the physician and family. Nevertheless, we believe that the physician who studies his patient carefully, is able in the individual case, to arrive at a reasonably accurate diagnosis as to whether he is dealing with a functional or organic entity.

The three striking characteristics of the Anginal syndrome, therefore, are: Its distribution, praecordium, epigastrium, neck, ulnar side of arms, especially the left. Its association with a peculiar sensation of anxiety, of angor animi. Its precipitation by effort and cessation with rest, often imperative rest.

The recognition of the true anginal syndrome is but the beginning of the physicians responsibility. He must seek to determine its pathological basis upon which rest the hopes for the future; the treatment and the prognosis, happily or unhappily, as the case may be, is always uncertain. Why is angina so important a syndrome? Because it is the outward and essential evidence, visible signs, of changes in the organism which are to cause the death of that organism within a relatively short time. And, furthermore, because of the dramatic character of a common fatal issue, sudden death, the most sudden that we know. — Clinic Building.

BIBLIOGRAPHY

1. R. Schmidt (Med. Klin 1922 No. 1 and 2). Editorial (Canadian Med. Asso. Jour.) March, 1924; pp. 245-246.

2. Wyss, V. (Schweizerische Medizinische Wochenschrift) 6-19-24. liv. No. 25 p. 561. Osler Vol. IV p. 285. Tice System Vol. VI p. 277.

3. Jonnesco (Presse Medicale) 1922, XXX, 353.

4. Goffee & Brown (Archives of I. M.) 1923, XXXI, 200.

DISCUSSION

W. L. ROSS, M. D., Omaha: I think it worth while to mention the fact Samson claims with a technique of diathermy he has been able to relieve it quite considerably. I never tried it myself, but there are many men throughout the country who have properly equipped light technique of a form of physiotherapy. It is based upon the fact the heart lesion is under-nourished; that you dilate the coronary blood vessels and capillaries and thereby strengthen the heart.

FRANCIS W. HEAGEY, M. D., Omaha: I hate to see this excellent presentation go by in this way. I think probably all of you will agree with me when I say the essayist has brought out some of the most important facts so far as angina pectoris is concerned. We are so accustomed to thinking about things in terms of sudden attacks and pain, with typical irritation under the left arm, and things of that kind. But I am sure there are many cases that go through our hands with coronary disturbances which never reach that stage, and yet suffer under the treatment we give for abdominal disturbances. I have in mind a woman who responds to digitalis, yet she refers most of her pains to the abdominal region, and calls them stomach, rather than heart, attacks.

J. B. POTTS, M. D., Omaha: How can you determine between pseudo and true angina?

W. L. ROSS, M. D., Omaha: Have you checked up on blood pressure in your cases? If so, I should be glad to hear the results.

(The reporter is not certain this first question was asked by Dr. Potts. Her notes say "Chairman", and Dr. Potts may have been absent from the Chair at the time this question was asked.)

DR. ARRASMITH (closing): I want to thank the gentlemen who were so kind as to remain and discuss my paper.

I have made no effort to set forth either therapy or therapeutics in my paper. I think these cases are individual cases, and their treatment depends upon whether we are dealing with a syphilitic aorta or a decompensated myocardium with sclerotic coronaries. I think we must deal with decompensation.

I feel the only way I can respond to Dr. Pott's question; is by a process of elimination and a careful case history — to eliminate all other factors of myocarditis and various cardiac pathology that might enter in, paying particular attention to a neurotic history.

All the patients in my series carried low systolic pressure with a comparatively high diastolic. Whether this low pulse pressure is consistent in angina, I would be reluctant to say on such a small series of cases.

As the result of experiments by Duncan C. Walton, Edgewood, Md. (Journal A. M. A., May 23, 1925), a 1 per cent copper sulphate solution is recommended as a treatment for white phosphorus burns. Whenever a phosphorus burn is received, a large sponge of absorbent cotton should be saturated with a 1 per cent copper sulphate solution, and applied to the burning phosphorus. Within two or three minutes, it will be possible to remove the sponge. The copper-coated phosphorus should then be removed by forceps or by irrigation, and the case then treated like any other burn.

CHOICE OF OPERATION IN PEPTIC ULCER

L. D. McGuire, M. D., Department of Surgery, Creighton University, Omaha, Nebr.

The purpose of this paper is to discuss with my new Nebraska colleagues the impressions of the surgical aspect of peptic ulcer which I have imbibed by association for five years with a well organized clinic which cares for large numbers of patients with peptic ulcer. Because of my youth I would refrain from discussing so important a subject with colleagues so many years my senior, were it not for the large number of patients with peptic ulcer it has been my good fortune to examine and explore.

The modern surgeon has no quarrel with the internist on the care of peptic ulcer. This is particularly true of duodenal ulcer. Surgeons recognize the beneficial effect of medicinal therapy. I believe that all duodenal ulcers when first they begin to manifest themselves, should be given the advantage of the medical regime which Sippy bestowed on our profession. If medicinal therapy is to be instituted, we should insist upon the regular regime. After taking careful histories on these patients I am convinced that haphazard medical treatment, merely eliminating the most irritating foods and administering an occasional alkali, results in a chronic duodenal ulcer which later is amenable only to surgery.

Even though a patient may later require an operative procedure in case of duodenal ulcer, I believe it is wise to encourage a medical regime for a time. For if the patient should find that the medical treatment only temporarily relieves, and later the old syndrome recurs, he is then psychologically much better prepared for surgery. Dr. Charles Mayo, in one of his jovial moods, once said that each patient with a duodenal ulcer should have the benefit of seventeen separate, distinct and complete medical cures before resorting to surgery. Not all frivolity but more than a grain of truth lurks in that sentence.

The type of individual who presents himself or herself to the doctor should be a factor for consideration as to which route, surgical or medical, to pursue. Occupation, race and finance should be factors for deliberation. The young woman or man in whom a neurosis is the basic trouble and in whom the ulcer symptoms are secondary or coincidental should always be treated medically. Even if surgically cured of the ulcer, they are dissatisfied because of symptoms of gastric neurosis. Jewish people, as a rule, are good subjects for medical treatment, for they stick to their regime like cooties to a young pup. There is a large group of farmers and laborers, however, who must earn their bread by hard physical labor, who cannot afford the long absence from work which medical treatment demands, and who will not or whose duties make it well-nigh impossible to follow a well-planned medical regime. Such patients, as a rule, develop marked symptoms early and from the economic standpoint as well as the functional standpoint respond best to operative procedure.

Complicating conditions such as perforation and obstruction always demand surgery, as does likewise more than one hemorrhage. I shall discuss the best precedure in these cases as I see them, a bit later.

Upon exploring the patient with an uncomplicated duodenal ulcer, one may be confronted by any one of a variety of pictures.

A small ulcer on the anterior surface of the duodenum frequently presents, with no surrounding duodenitis. Such an ulcer appears as a whitish scar on the serosa which becomes injected and stippled after gentle brushing with gauze. This is the type which lends itself better than any other to excision, cautery, or pyloroplasty or a combination of two of these methods. A wise surgeon who wishes to do surgery on the duodenum itself picks one that has no large area of duodenitis and one that is freely mobile.

The simplest procedure for the removal of these tiny ulcers is to puncture them through the center with a small hair-pin cautery which is heated only to a low degree of heat, and gradually enlarge the puncture with the cautery until the ulcer is burned completely. This method properly employed has two advantages—namely, that there is no bleeding and only a very small hole is made in the duodenum. This small opening is readily closed by an inverting stitch, serosa to serosa. If one prefers the knife to the cautery, Judd's method is extremely simple and very efficacious. By this method the ulcer is removed by an elliptical incision placed transversely. Closure of this elliptical incision slightly shortens the duodenum but does not narrow it. There is more bleeding by this method and the opening in the duodenum becomes larger than one would expect. That the opening may not become large, only one-half of the ellipse may be cut free and that half sewed before the other half of the ellipse is removed. This is a most efficacious procedure. Simple removal of the ulcer by either of the preceding methods, while satisfactory in some cases, does not yield as satisfactory returns as does removal combined with pyloroplasty or gastroenterostomy. Simple removal alters the secretion of the stomach only slightly, not more than half that accomplished by gastroenterostomy. Mann's work of producing chronic ulcers by side-tracking the alkali portion of the intestinal tract and thereby producing a higher acidity, is worthy of consideration, tending to show that operation should aim at alteration of gastric secretion and lowering of the amount of acid present.

Pyloroplasty should be done only when the duodenum is mobile and the ulcer is not surrounded by a large area of duodenitis. The duodenum is extremely friable. If one be too liberal or haphazard in his incision into it, he may find a hole that is extremely difficult to close. Leakage from a duodeum has been the cause of more than one autopsy. The inexperienced surgeon who operates for duodenal ulcer will do well to keep away from the duodenum and do a gastroenterostomy instead.

Large, calloused ulcers with surrounding duodenitis are frequently encountered. The duodenum in this type is fixed, immobile and plastered against surrounding structures. Perhaps an old perforation is present. To attempt duodenal surgery in this type is folly. Posterior gastroenterostomy yields excellent results.

A duodenal ulcer with a history of successive hemorrhage frequently presents. Such an ulcer will frequently bleed while under medical treatment. It will likewise bleed following a gastroenterostomy which relieves all other symptoms. Such an ulcer should be destroyed. I believe the safest method of doing this is with a hair-pin cautery heated only to a low degree of heat. This will destroy the ulcer and at the same time plug the arteries leading into it. It obviates an unwelcome amount of bleeding during the operative procedure. Such a bloodless field cannot be obtained by any other procedure. Upon exploring a duodenum in a case with an ulcer history with hemorrhage, one may find merely a small non-indurated ulcer-scar on the anterior surface of the duodenum. It is not safe to assume that such an ulcer is the site of bleeding. I have frequently seen such duodenums opened and explored, and a second ulcer, large and indurated, found on the posterior wall opposite the small anterior scar. If such an ulcer be overlooked, the hemorrhage will probably recur.

Acute perforations of the duodenum should be recognized and explored quickly. The perforation should be closed and omentum sewed over it. If gastroenterostomy be done at the same time, further trouble will be prevented. It is true that occasionally an ulcer will give no more trouble after simply closing a perforation. Gastroenterostomy adds very little danger if the patient be explored in less than eight hours, for until then the gastric contents seem not highly infective. If explored late, of course, closure of the perforation and removal of infected material is all that can be attempted. With a gastroenterostomy added there is less strain on the duodenal closure.

Duodenal ulcers with obstruction respond more beautifully than any other type to simple posterior gastroenterostomy. Such patients should be prepared for operation by the internist. He should study the blood chemistry, for these cases of obstruction of the upper gastrointestinal tract show a rise in blood urea, a fall in plasma chlorides and a rise in the carbon dioxid combining power of the plasma. Tetany may or may not accompany such a picture. The condition rapidly clears upon administration of sodium chlorid, sugar and water. Alkalis are contra-indicated because of the tendency to alkalosis. After the internist has prepared the patient as above indicated, and frequent gastric lavage has improved the tone of the gastric muscles, gastroenterostomy can be performed with comparative safety and most gratifying results.

Occasionally a patient with an excellent ulcer history and high acids shows at operation what appears to be a normal duodenum. Should the surgeon open the duodenum and explore? Realizing that a chronic appendicitis, chronic cholecystitis or other extragastric lesion may occasionally give a typical ulcer history, the surgeon probably will be guided in this by the faith he has in his roentgenologist. If his roentgenologist is correct in ninety-five per cent of cases, the surgeon is justified in exploring the duodenum with a good history and a positive ray. If the surgeon is not sure of his roentgenologist, and if the appendix or gall-bladder show evidence of disease, he is safer to attend to the extragastric lesions and leave the duodenum alone.

Duodenal ulcer and chronic appendicitis coexist so frequently that it seems best to remove the appendix in all cases of duodenal ulcer, provided that the risk be not rendered too great by some complicating condition.

As a concluding thought on duodenal ulcers I would say that posterior gastroenterostomy alone will symptomatically cure eighty-five per cent of all cases of duodenal ulcer and it is the safest procedure for the occasional operator. However, I do not feel that the occasional operator should deal with peptic ulcers.

Gastric ulcers present a different problem from duodenal ulcers. The difference lies in their potential malignancy. Large series of both duodenal and gastric ulcers have been traced after operation and their morbidity and mortality tabulated. A higher mortality was found in gastric ulcer, and the increased mortality was due to carcinoma. MacCarty has found carcinoma at the edge of many gastric ulcers, when clinically and on gross pathological examination they were ulcers. Upon this basis, all gastric ulcers are surgical and the surgery should involve removal of the ulcer.

Approximately ninety per cent of gastric ulcers are along the lesser curvature or on the posterior wall close to the lesser curvature. The method most universally satisfactory for this group is cautery excision of the ulcers combined with gastroenterostomy. The chief cause for difficulties and dangers in this type of operation is failure to obtain good mobilization and exposure of the lesser curvature and the ulcer before beginning its removal. As it is important from the standpoint of prognosis that the ulcer be examined microscopically, the cautery should excise the ulcer without destroying it. Objection has been made to this method that removal of an area of the lesser curvature interferes with the nervous mechanism and, therefore, the motility of the stomach. With a large, dependent gastroenterostomy the emptying of the stomach is well cared for, and these people are very grateful patients.

A sleeve resection may be done for this same group of ulcers, particularly those rather close to the pyloric end. If the ulcer be closer to the cardia than to the pylorus, sleeve resection becomes much more difficult. When two or more ulcers in the same segment of the stomach are encountered, sleeve resection is frequently the best procedure. This operation should yield a stomach very little different from a normal stomach. The early postoperative convalescence is not so smooth, however. Gastric motility seems to be interfered with for a time. They are more apt to develop a gastric retention requiring lavage for several days. The ultimate results are satisfactory.

I wish to call your attention to posterior-colic-antero-posterior gastroenterostomy. I have assisted at this type of operation at the Mayo Clinic, and believe nothing has been published concerning it. I have a paper on the technique of the operation soon to be published. This operation is similar to the posterior gastroenterostomy except that the jejunum is united to the stomach partly on its posterior and partly on its anterior wall. To accomplish this the anterior wall is pulled posteriorly through a rent in the great omentum at the most dependent portion of the stomach. This operation is useful in any case in which it is difficult to find sufficient room for a gastroenterostomy on the posterior wall. Its value is particularly felt in cases of large gastric ulcers on the posterior wall. After removal of these ulcers there is not sufficient room on the posterior wall for a gastroenterostomy. The removal of the ulcer may distort the contour of the stomach so that the most dependent portion falls anteriorly. Then it is wise to use part of the anterior wall. Other conditions which make the posterior operation difficult and the antero-posterior more satisfactory are: Marked adhesions preventing exposure of the posterior wall; small high-lying stomach; and short fat mesentery. Knowledge of this operation aids in many cases where the surgeon would be in distress because of difficult exposure of the stomach.

Discussion of gastric ulcer would be incomplete without consideration of the Polya operation. For large gastric ulcers it has no peer. The Polya operation removes the greater part of the acid-bearing portion of the stomach. The postoperative convalescence from the type of operation is usually particularly smooth, and recurrence of trouble extremely rare.

Gastrojejunal ulcers are very formidable. If the patient can live reasonably comfortably on a medical regime he should be satisfied. If the trouble becomes increasingly severe, a Polya resection of the stomach is indicated. Formerly gastrojejunal ulcers were excised and the gastroenterostomy opening either closed, enlarged, or the stoma placed in a new place. Recurrence of trouble was so frequent that Polya resection of the acid-bearing portion of the stomach became the operation of choice. It has proven eminently satisfactory in these cases. Less radical surgery does not cure.

There is a small group of very large, inflammatory gastric ulcers with old chronic perforations and marked adhesions. Occasionally one finds such a picture in an elderly person of low vitality. It is well in such a case to make a large posterior gastroenterostomy and leave the ulcer temporarily. In a few months the patient's condition will markedly improve and a second exploration will show a much altered picture. The inflammatory mass will have became greatly reduced in size and the inflammation will have subsided to a great extent. Removal at this second stage is attended by much less risk to the patient and is accomplished with much greater ease by the surgeon. The patient generally feels so well after the first operation that he hesitates about submitting to a second. However, the second operation should be insisted upon because of the danger of malignancy developing on the ulcer.

An extremely rare contingency is an ulcer very close to the cardia. These ulcers are usually so situated that removal is impossible. These ulcers are extremely painful but the emptying power of the stomach is not hampered. Merely doing a gastroenterostomy and allowing the food to pass by the ulcer does not alleviate the pain. Cure is obtained by doing a Witzel jejunostomy and feeding the patient through a catheter. This gives the stomach absolute rest, prevents food from brushing by the ulcer, and the pain ceases. It is surprising how quickly they lose their pain. The jejunostomy may be maintained for months, or until satisfied that the ulcer has healed. If it becomes malignant, one at least has the lame satisfaction that it never was removable at any time.

Recently many European surgeons have become extremely radical in the surgery of all peptic ulcers. They resect about one-half of the stomach not only for large and multiple gastric ulcers, but likewise for all duodenal ulcers. Doctor Finsterer leads this group. American surgeons have been slow to follow. It seems too radical a procedure for the duodenal ulcer, when there is no danger of malignancy and where other methods prove so satisfactory and involve less risk. However, these men report good results. It is certain that with most of the acid-bearing portion of the stomach gone, recurrence would be much more rare.

Local, regional and sphlanchnic anaesthesia is very satisfactory in gastric surgery. If combined with ethylene or nitrous oxid or oxygen the patients suffer no pain, are sufficiently relaxed, and leave the operating table in excellent condition.

In conclusion, for what little I know of gastric surgery I gladly give credit (if any credit be due) to my former preceptors at the Mayo Clinic at Rochester.

DISCUSSION

DR. A. D. DUNN: I feel rather out of place in a discussion of a paper on surgical treatment of ulcer. We have listened to a very careful, painstaking, well worked out, methodical presentation of the surgical treatment of ulcer by Dr. McGuire. The treatment of peptic ulcer comes up periodically because its treatment is not as yet as satisfactory as one might desire. The surgeons are agreed that patients should receive medical treatment before operation is resorted to. I have never yet had a patient, suffering with peptic ulcer referred to me by a surgeon for treatment. If the patient consults the surgeon first he is very likely to be operated on; if he consults the internist he will treat him if he can get away with it; if not he will call in the surgeon. About two years ago I was talking to Dr. Plummer and asked him what he would do if he had an ulcer. He said he would have a gastro-enterostomy done. I asked Dr. Phemister of Chicago and he replied, "Take a Sippy cure and if it did not cure me I would start in and take it again." This disagreement in regard to the treatment of ulcer is explained by the fact that our notions of gastric functions are unsettled and changing. To illustrate: The ghost of hyperacidity is being laid away and we have hypersecretion in its stead; Carlson has stated that contrary to accepted opinion, the pyloric end of the stomach does not secrete hydrochloric acid; therefore, the whole fundus of the stomach would have to be done away with, if we are to remove the acid part of the stomach; then, too, our ideas are being changed in regard to foods.

Both in medical and surgical cures we have not sufficiently evaluated rest. Sippy never attributed any great part of the value of his treatment to rest. The surgical patient is laid away for three or four weeks with almost no food and the stomach has a chance to rest. How much rest in bed has to do with surgical cures is also problematic.

I just want to touch on the question of malignancy on an ulcer basis. This question has been discussed many times; one finds Deaver and Ewing on one side and the Mayos on the other of the discussion. From personal experience I have never been able to convince myself that ulcer was at the bottom of carcinoma of the stomach. I have a patient now who has had no stomach disturbance until within the last two years and now she has a large carcinoma. From impressions gained from a very limited number of ulcer cases treated surgically I am a bit shaky as to advising surgical treatment.

Maybe our luck with them has been bad; the postoperative courses have been stormy and deaths have not been infrequent in the wake of operative intervention. Furthermore, we see several cases of gastro-jejunal ulcer every year, which is a discouraging combination. However, a considerable number of ulcer cases must be surgicalized — there is nothing else to do. We have not succeeded in keeping them free from symptoms on medical regimes and often the cases have carried an ulcer for ten to twenty years before we see them. The results of medical treatment on old, chronic peptic ulcers is notoriously uncertain. Most of the cases that we have turned over for surgical therapy have had clean-cut surgical indications, such as extreme chronicity, stenosis or perforation. The surgeon should not be criticized for a failure to obtain satisfactory results in such cases. Satisfactory results, however, can be obtained in a large degree of reasonably acute peptic ulcers by medical regimes. The surgeon, however, when he puts into his history that a patient has had several futile ulcer cures should acquaint himself, before advising operation on this basis, the type of ulcer management the patient has had. In too many instances the treatment instituted is deserving of the term "mismanagement".

DR. DONALD MACRAE: My experience in ulcer cases has been limited, and as most of my patients are laboring men, I have great difficulty in getting them to take a long course of treatments; this type of individual cannot carry his "half and half" around in his pockets, he wants to get well quickly and for this it is necessary to do surgery. But if I had an ulcer I would have surgery, first, last and all the time.

I don't believe we should operate unless we feel the ulcer. Moynihan says that 9 out of 10 "ulcer" cases have no ulcer at all. They have gall bladder trouble or appendicitis. I think many cases treated medically are not ulcers. We had a case in which one of your leading x-ray artists made a diagnosis of ulcer and he was given medical treatment. He did not do so well and we operated and there was no ulcer there at all. I think many medical men, Sippy included, have treated cases where there was no ulcer at all. I have 2 cases in the hospital at the present time, one had a ruptured duodenal ulcer who had received the Sippy cure in Chicago and the other one at Hastings, Ia. Seeing all these cases get well makes me feel that ulcer is a surgical case just as much as is the appendix. Out of 100 cases in my experience, 90 have been duodenal ulcer and 10 gastric ulcers. Ulcers of the duodenum are usually in very strong men, many of them appearing in athletes.

The very operation we do for spasm of pylorus is gastroenterostomy. I have seen many good results in the operation when I have also shut the pylorus off from my gastroenterostomy, where the pylorus is obliterated. I shut the pylorus off by a stitch, tying the stitch around it and shut it off tight.

Ulcers in the duodenum are almost always the same size, just have a little hole in them. When I see an ulcer of this type I take the cautery and run a hole in it and get rid of it entirely. I believe I stand with J. M. Finney in the following statement: "No man has the right to say there is a gastric or duodenal ulcer until he gets his fingers on it, until he sees it." They get a history and x-ray confirmation and go in and do a gastroenterostomy.

I know a man who has not done much surgery of this kind might get hold of a normal pylorus and mucous membrane and think it must be an ulcer. It is a very simple thing to make a hole in it. Don't operate until you are sure there is an ulcer.

I find it very difficult to get my patients to remain in bed 2 or 3 months, and with my class of patients I must operate because I want to get them back to work as soon as possible and to get them well.

DR. A. A. JOHNSON, Council Bluffs, Ia.: I think that in treating gastric or peptic ulcer we are all thinking of the ulcer or stomach or duodenum without thinking of the patient as a whole. In the case of chronic appendicitis of gall bladder trouble we do not follow the medical regime without first removing the focus of infection.

In the case of spasm you relieve it by doing a gastroenterostomy and it does relieve it but I think you could relieve the spasm by medical treatment just as well and I do not think we should subject the patient to a serious operation without first giving it medical care.

Conclusion, Dr. L. D. McGuire: In conclusion I would like to say that a large number of cases of duodenal ulcer operated upon at the clinic had many years of medical treatment and still had trouble. It is true that a large number of the patients are farmers or laboring people, and that perhaps accounts for their failure to get results as they do not follow the regime. They do hard work and then come in and eat a big meal.

Dr. Roeder suggested that a surgeon had better pick one operation for ulcer and stick to it. If a man were to confine himself to one operation for duodenal ulcer, it had better be a gastroenterostomy, as most operators will encounter much less difficulty doing a gastroenterostomy than operating on the duodenum.

Every time a duodenal ulcer is explored and operated the appendix should be removed, unless complicating conditions render the risk too great.

Dr. Dunn mentioned the disputed point about the ulcer being the background of carcinoma. I am sure that most carcinomata do not have an ulcer basis, but I feel certain that carcinoma is frequently found in what clinically and grossly pathologically was an ulcer. I have seen this many times in the pathology laboratory.

I have had the pleasure of helping to remove many gastroenterostomies which had been done for stomach trouble, but in running over the stomach, palpating and opening it I was convinced that a large number of bad results occurred because the case never had an ulcer. We should be sure that an ulcer is present. There is an anemic spot on the duodenum and one who is not accustomed to distinguishing a tiny ulcer might think this was an ulcer. This anemic spot is 1 cm. in diameter, situated on the anterior surface of the duodenum, and might be mistaken for a tiny ulcer.

I wish to take this occasion to thank those who have been kind enough to discuss my paper.

ARTIFICIAL PNEUMOTHORAX IN MEDICINE

M. C. Howard, M. D., Department of Medicine Creighton Medical College, Omaha, Nebraska.

Frequently in the practice of medicine we are called upon to administer aid to one suffering with a pulmonary lesion. At the time of our examination there are flitting through our minds the possibilities for this diagnosis or for that diagnosis. As we gather our data from the history of the case plus our physical findings we gradually eliminate the various conditions which do not coincide with our clinico-pathological findings.

As this process eventually leads us to a definite point upon which our diagnosis is fixed the question of therapy now holds the field. We know that the patient or his relatives have called us primarily to ascertain the cause of his disease, but above all to relieve him of his symptoms. A correct diagnosis is the goal towards which we aim, but to the patient it is of little consequence. What he desires and demands is symptomatic relief.

Since such is our lot in the practice of medicine I thought it might be of some benefit to recall to your minds an old therapeutic procedure in the treatment of certain pulmonary diseases, namely artificial pneumothorax. Looking back over the history dealing with this subject we find that in the year 1822 Carson, an English physiologist, suggested the advisability of inducing pneumothorax in phthisis. From this time on up to the year 1894 further reference was made to this subject by various men. It remained, however, for Forlanini, an Italian, actually to use this procedure in his clinical work. In 1898 we find the late J. B. Murphy recommending the same procedure in selected cases of lung abscess. Since this latter date many clinicians, mostly those dealing with pulmonary tuberculosis, have reported their experiences with this method of therapy.

Artificial pneumothorax, as its name implies, means the introduction of air into the pleural cavity. By the introduction of this air certain changes occur in the intra-pleural pressure. Normally in the intra-pleural space, which is such only in a potential state, there is a negative pressure. This negative pressure is one of the prime factors in preventing excessive collapse of the lungs at the end of each expiration. Hence, when air is injected into one of the pleural cavities the first condition we bring about is a change in the intra-pleural tension. Gardener in a recent article stated that from a study of fifteen cases of artificial pneumothorax coming to autopsy he had found the greatest compression in the outer two-thirds of the lung. Most of these cases had had conservative treatment, since in only two cases was sufficient air introduced to give positive manometric readings.

Since the greatest compression is in the outer two-thirds of the lung certain changes will result in the lung tissue. These changes will affect those structures whose frame work is the least able to withstand this new pressure. These are the smaller blood vessels and alveoli. As the intra-pleural tension is raised the larger vessels may be collapsed and show changes leading to an endarteritis or thrombosis. This is especially true of long standing cases under this treatment. The gross picture in this type is very interesting. The lung is markedly reduced in size, has a dark greyish appearance and in one instance the collapsed lung looked more like large glands situated in the hilus area.

With such changes the question at once arises as to what is the effect on the pulmonary circulation. This can be answered in two ways. Experimentally Dock and Harrison found that in rabbits when a right sided pneumothorax was performed the proportion of blood passing through the compressed lung was gradually decreased. At the end of a few days this was estimated to be about one-fifth of the total flow, a forty per cent decrease of the total flow in the compressed lung. Clinically we know that the degree of embarrassment to the patient is far removed in comparison to this experimental data. The reason being that the blood flow is gradually decreased in the compressed lung and there is a compensatory increase in the healthy or uncollapsed lung.

In one of the ambulatory clinics in Vienna pneumothoraces were performed twice a week. These were on the mild or non-toxic tuberculous cases who through necessity were forced to gain a livelihood. They would report at the clinic every two or three weeks. After being re-examined physically and by fluoroscopy a therapeutic pneumothorax was performed. Immediately following this they would dress and return to their occupation. In no instance was any cardiac embarrassment observed. One case in particular was interesting. She was a member of a ballet team, and continued her work as a dancer during the time she was under treatment.

The effect on the alveoli and bronchioles is very similar to that on the blood vessels. The greatest compression on the former occurs in the periphery of the lung and gradually decreases as the hilus area is reached. With such a change the expected result would be an expulsion of the contents of these air passages into the larger bronchi. From here it would be expelled by coughing.

From this data two facts make themselves evident in artificial pneumothorax. The first is that a compression of the lung tissue takes place, especially in the outer portions of the lung fields. With this compression there is a change in the blood flow through the lung and an expulsion of the contents of the alveolar or bronchial vessels into the larger bronchi. The second is that this procedure causes very little or no embarrassment to the patient, even though there is a change in the total flow of blood through the compressed lung.

Such being the case one should think of this method as a possibility of therapeutic attack in a limited, but none the less, a very distressing class of cases. The class includes lung abscess with or without severe hemoptysis. Although these cases are very infrequent, when present they tax our armamentarium of offense and frequently leave us in a helpless state. Lung abscess may occur as a post-operative complication or as a sequela to pneumonia or some other pulmonary infection.

During the acute stage the symptoms of abscess may be toxic in nature, and it is only when the abscess ruptures into a bronchus are we aware of the true condition. With the draining of the abscess there may be a rapid convalescence of the patient. On the other hand the abscess may pass from an acute stage into a subacute and finally into a chronic condition. When this happens the patient changes from one acutely ill into a state of chronic invalidism. By this term one does not infer that the patient is bedridden but he is physically unfit for his role in life. Also the odor emanating from this abscess makes him an unwelcomed visitor among his fellow men.

As a means of combating the above one should think of the possibilities of lung compression. This can be used in a large number of cases but its use depends upon several factors:

First: An abscess situated near the periphery of the lung is a contra-indication, for compression may cause an abscess so situated to rupture into the plural space, with a resulting empyema. The abscess should not be allowed to pass into the subacute or chronic stage. The best time for compression is between the sixth and fifteenth day following its rupture into a bronchus. Those abscesses situated in the upper half of the lung field are the more favorable for this treatment. Multiple abscesses are not favorably influenced by this method.

Second: For a successful collapse there should be a free pleural space. There, however, are cases which seem to have diffuse pleural adhesions but a successful collapse may be obtained. So in every instance one should attempt the precedure when pneumothorax is called for.

Third: Gas—various gases have been used but the cheapest and the one least irritating is atmospheric air. The quantity used varies with the case. In my opinion a preliminary injection of two-hundred c.c. of filtered air should be given. This is followed by radiograms and fluoroscopy. By this we determine the extent of the collapse as well as the presence or absence of adhesions. After this preliminary injection a therapeutic injection is given to bring about relief. The amount of air at this later injection may be as much as two thousand c.c. but one-half of this amount is usually sufficient.

Fourth: Time: These injections should be continued until the patient is clinically well. Fluroscopic control is the best means of judging how much air is still present in the pleural cavity. Physical findings are unreliable and valueless. If large amounts of gas are used, an injection every two to three weeks may be sufficient. The smaller the quantity, the more frequent the injection.

Fifth: Position of the patient—he should be lying on the unaffected side, with the arm of the affected side placed over his head. This causes a slight widening of the intercostal spaces. At the same time the foot of the bed should be slightly raised.

Sixth: Place—Any place in the axilla but avoid the apical or basal regions.

Seventh: Manometric readings: These are the true guide to what we are doing. The following are the readings when the needle may be in various locations.

Free Pleural Cavity	Inspiration Expiration	-10 -3	A wide variation in negative pressures.
Lung Tissue	Inspiration Expiration	-2 +2	A narrow variation.
Subcutaneous Tissue or Blood Vessel	Inspiration Expiration	-1 -1	When in blood vessel blood may drip from the needle.
Pleural Fluids	Inspiration Expiration	-6 -6	Low negative presure with no variation
Large Bronchus	Inspiration Expiration	-10 -10	Abnormally wide variation.

PRECAUTIONS:

First: One should be guided by the manometric readings. When in doubt as to whether the needle is in the plural cavity or other structures, pull out the needle.

Second: Any signs of cerebral irritation should terminate the pneumothorax.

Third: Sudden changes of temperature should be avoided as well as sudden changes in altitude following pneumothorax.

Fourth: The air should be slowly introduced and when the manometric readings approach a positive pressure or the patient complains of pain, this is sufficient.

Fifth: Severe coughing may necessitate withdrawal of the needle. Otherwise the lung tissue may be torn with a resultant bleeding or infection. Codeine may be given prior to the pneumothorax as a prophylactic measure.

POSSIBLE COMPLICATIONS

1. Pleural shock — this is very distressing and is attended at times by death.
2. Air embolus — is a dangerous but not necessarily a fatal event. Adrenalin injections should be given at once.
3. Pleural effusions. If sterile aspirate and inject air. If an active empyema surgery should be considered.
4. Subcutaneous emphysema is due to leakage of air into the subcutaneous tissues. Generally brought on by severe coughing.

The above data were gathered from personal experience in the different clinics in Vienna, but especially from Professor Wilhelm Neuman. The results that he obtained in the selected cases of lung abscess by artificial pneumothorax were very striking. The toxic symptoms quickly subsided, the purulent expectoration rapidly diminished and, as a rule, a good clinical recovery took place.

CONCLUSION:

In view of the ease with which these injections can be given, as well as the fact that the patient undergoes very little danger, we should consider this method of attack in combating this type of pulmonary lesion. In doing so we must bear in mind the various conditions, precautions and dangers enumerated in the body of the paper. When contraindications arise we may then resort to surgery or bronchoscopic irrigations.

REFERENCES:

Gardner, L. U.; Amer. Rev. Tuberc., 1925, X, 501.

Dock, W. and Harrission, T. R.; Amer. Rev. Tuberc., 1925, X, 534.

DISCUSSION

John Allen, M. D., (Omaha): Pneumothorax is no longer a fad, because there is probably no clinic where there is any authority that would not admit it is a definite, effectual, beneficial thing, provided those cases in which it is used are carefully selected.

In the last four or five years I have introduced air for pulmonary tuberculosis something over two hundred times in fourteen or fifteen cases. Some five of those have been merely incidental refills for transient patients. Of that entire number, two are dead, and I have remaining six cases who have been under such treatment for periods from six months to four years. Four of these cases are in women doing their housework, living practically normal lives, who report to the office for their refill of distilled air. I scarcely ever use anything but that in the thorax. They report at intervals from two to five weeks.

As to the matter of the pathological physiology of the situation in the chest as relates to the seriousness of the disease, information on that has lacked considerably. It was only within the last two years physiologists have made real attempts to determine what goes on in the chest. From a clinical standpoint, we have learned long ago in unilateral disease, properly chosen, we have had an effective means for restoring a certain group of patients to practically normal life by its use.

In the matter of so called lung abscess, within the last spring I have seen four cases coming under that classification where I have attempted the introduction of air into the pleural cavity. One followed a tonsillectomy, disabled since June, 1924, not physically weak or running a temperature, but rather, unable to work because of a profuse, fetid expectoration, and ultimately developing severe hemorrhages. He had had something like eighteen hemorrhages in a week in a local hospital. Following the introduction of air, up to this time there has been no further hemorrhage. The case was kept under collapse sixty days. He is practically symptom free today. The fluoroscopic view shows nothing remaining in the way of this pathology.

One other case is dead, and the third case still has pulmonary abscess, because it is in the classification which Dr. Howard mentioned, with superficial adhesions; so the pneumothorax treatment is not effective.

The fourth case was a superficial pulmonary abscess.

Dr. Howard says the best time to introduce the pneumothorax is the sixth to the fifteenth day. Some do not rupture for from thirty days to two months.

A. P. Furgason, M. D., (Lincoln): I used this treatment some years ago. In early beginning cases, Dr. Murphy held the introduction of nitrogen would be retained longer than filtered air, so it was preferable. That, I understand, has been proved a fallacy; that it is now admitted air will hold longer than gas.

Dr. Howard, (closing): I think Dr. Allen misunderstood me. What I said was six to fifteen days after the abscess has ruptured and before your cavity becomes lined with thick scar tissue.

As to the Doctor's question about the different types of air: They have used nitrogen and oxygen; but I believe, as Dr. Allen brought out, most men are using atmospheric air, for all you have to do is to pass it through sterile gauze. It does not stay as long as nitrogen, but your patient can come back if this air is absorbed, or you can regulate the time of the patient by the amount of air you inject. The reason for using atmospheric air is that it is easier to obtain and it is not so irritating.

I wish to thank the men who have discussed the paper, and those of you who have so kindly stayed and listened to it.

HEMOPHILIA — AN INTERESTING CASE

A. A. Conrad, M. D., Crete, Nebraska

To my personal knowledge there have been three deaths from hemorrhage in hemophiliacs from our community since 1908. All have died in hospitals following surgical measures, none so urgent that time could not have been taken to try to forestall a fatal outcome, had a complete history been taken.

As a child I became acquainted with this tendency, to uncontrolled bleeding in certain individuals, by information derived from my father while on calls with him to two of the deceased. Naturally the information stuck with me because it seemed such an inconvenient affliction. It must be a mighty disagreeable sensation to know that you may bleed to death from an apparently trivial injury.

The pecularity of the condition which usually spares the female, though it is transmitted by her to about two-thirds of her male offspring and while twenty-five to thirty per cent of the female offspring will not transmit it to their male children is striking. The female conductors seem to be especially fertile and it is claimed the majority of their children are males. In the families I have under consideration this is not true.

The fact that it is a familial disease or morbid state will account for the appearance of several hemophiliac individuals in one community and none in another—therefore, many physicians may practice a life time and never encounter a patient with this tendency. When we have not had to deal with a case it is easy to forget that there are such individuals. It is quite likely that the surgeons who operated upon two of these cases did not take it into consideration or they would have used precautions against fatal hemorrhage. The surgeons who operated upon the third case that died were told by the mother that the boy was a bleeder and they laughed at her for suggesting such a thing. This boy was allowed to bleed for six days before effort was made to check the oozing except to use ice packs and give cracked ice to suck. When he was practically exsanguinated, a transfusion was done. The operation was a success but the patient died.

This tendency to bleed may be noticed at birth when the cord is cut or it may not be apparent for a year or two. It seems to be more prevalent under ten years of age and to decrease as age increases. It is claimed that the coagulation time varies in the same individual at different periods, even at times approximating normal.

Serious or even fatal hemorrhage does not necessarily follow trauma—it may be spontaneous. The most common site of hemorrhage seems to be from the nasal mucous membrane, though it may develop from the lips, gums, buccal mucous membrane, throat, lungs, stomach, bowel, kidney, ureter, bladder or any part of the body. Tooth extraction is a very prolific cause of severe and often fatal hemorrhage.

Bleeding into the joints, pleura, pericardial sac, and any other cavity of the body, actual or potential, is possible and should be borne in mind. Persistent or long continued bleeding between articular surfaces may result in destruction of the joint and marked deformity, while that into pleura, pericardium, or abdominal cavity may produce adhesions.

As to etiology, pathology, symptoms and treatment, I have nothing to offer. This I have found: After profuse and long continued bleeding there is a very rapid regeneration of the blood, apparently more rapid than in a normal individual. Howell has demonstrated that in hemophiliac blood, although there is a shortage of prothrombin, that present is qualitatively active. He feels that the lengthened coagulation time is due to a shortage of prothrombin in the circulating blood only. Others have demonstrated that the platelets, if present in normal numbers, ordinarily are deficient in prothrombin producing activity.

Evidently then our mission is to supply the deficiency in order to arrest the hemorrhage. The old calcium deficiency theory has not seemed to work out. I loaded one patient with calcium lactate until I was ashamed to tell him to take any more because hemorrhages, traumatic and spontaneous, occurred as freely as when he was not taking it and his coagulation time was not appreciably shortened. In fact, sometimes I thought it was increased. Adrenalin applied locally to the mucous membrane seemed to diminish the bleeding from the locality temporarily. Human blood, horse serum, antitoxin or Hemostatic Serum P. D. & Co., gave the best results and I am shooting hemostatic serum at regular intervals now to see what results will be forthcoming. It does decrease the coagulation time by several hours. How long it is decreased after a shot I have not been able to determine for one can hardly go out with a lariat and haul the patient into the office for a test when he outweighs one 30 or 40 pounds.

Family history: Grandfather living, good health. No history of hemophilia in his ancestors or brothers.

Grandmother has one brother living in good health. One brother died of convulsions in infancy. No history of hemophilia in her ancestors. She gave birth to ten children, five boys and five girls, and had one abortion at the beginning of the third month and nearly bled to death. That was the only time she ever bled severely.

Of the five girls, four are living, three are married, one is single, one died at four months of summer complaint.

The first daughter has given birth to four girls and one boy. None are bleeders.

The second daughter is the mother of five girls. No bleeders.

The third daughter is the mother of our patient.

Three of the boys are living and in good health, fathers of fair sized families. None of their children are bleeders.

Two of the boys are dead. One in 1908, aged 17, died following an operation performed because of a hematuria of three weeks duration. The other died in 1917, aged 27, following an operation on the knee. Both had histories of severe and frequent nose bleeds. Traumatic or spontaneous hemorrhages especially into the knee joints, profuse and long continued bleeding following tooth extractions, etc.

Our patient's father died of pneumonia age forty-five.

Mother living, in good health, has had three children, two boys and one girl. A miscarrage was followed by very severe hemorrhage but that is the only history of bleeding in her.

Brother of patient born with a very large caput. At one year of age fell from a high chair striking his head, with resulting hematoma of large size. This was incised by a doctor and the boy nearly bled to death. Up to time of death he had periodic epistaxis which would continue for hours and leave him pale and weak. Tooth extraction was always followed by profuse bleeding which often lasted five or six days. Sometimes hemorrhage would not start until the second day after the extraction. From early childhood he had been subject to so-called "rheumatism" which manifested itself by swellings in or about knees or ankles and occasionally in the elbows. These swellings often followed a bruise or heavy work or appeared spontaneously. They remained ten to fifteen days and subsided, leaving discoloration of the skin. This evidently was considered rheumatism and tonsilectomy was advised. He was fourteen years old at time of operation and he died the seventh day following tonsilectomy.

Sister of patient in good health. In 1919 we removed her appendix without unusual amount of bleeding.

Personal history: Birth was normal. No sign of increased tendency to bleed until four years of age when he stuck a pitchfork into his foot. This wound bled almost continuously for four days. Previous to twelve years of age he had, at various times, swelling of a knee, an ankle or an elbow, with pain and stiffness for a duration of ten to fifteen days. He frequently had severe nose bleeds.

I first attended George K. in 1917, at the age of twelve years, for stiffness of the right ankle which they had been told was due to rheumatism and was of almost a year's duration. There was a certain amount of ankylosis which I now believe was due to a previous hemarthrosis. This cleared up under hot soakings, gentle massage, and passive motion. Had I known then what I do now I do not believe I would have advised that treatment. Some one has said "The Lord watches over fools and babies". You may guess where I come in.

On April 12th he came to my office with a large dusky swelling just above the right knee joint, the result of having struck the knee against a plow handle 5 days before. This swelling was not tender, but quite painful upon walking. On April 27th, 15 days later, the swelling was still present but reduced in size.

May 19th, '22 he consulted me because he had pain and stiffness in the right elbow and both knees. There was no swelling of the joints, no redness nor increased heat. He had had a recent sore throat; the tonsils were still subacutely inflamed. This pain I believe was due to a rheumatic infection. The swelling of the right knee had disappeared.

December 1st, 1922, he cut the base of the right thumb on the palmer surface, with a chisel. When I first saw it, bleeding had been going on for several hours. Half an hour after packing the cut with gauze soaked in thromboplastine, bleeding had stopped. December 3rd redressed, and had profuse bleeding again after removing the dressing. Following the second dressing he had no further trouble with bleeding.

December 12th, he developed mumps. No complications.

June 20th, 1923, while getting onto an ice wagon he noticed pain in the left glutial region. Within a few hours this pain radiated down the back of the thigh, to the knee and a few days later down to the external lateral surface of the calf where it was described as a burning pain. The pain had been so severe that hypodermics of morphine had been required to quiet him. I had been out of town and did not see him until July 5, 15 days after initial pain. There was a hard swelling in the left ischial region the size of a small grape fruit. Rectal examination showed a psoas involvement. Pressure upward and backward on this mass increased pain along the posterior surface of thigh and caused him to complain bitterly of the burning pain in the calf. By July 12th swelling was much reduced and pain was greatly alleviated. The skin in the ischial region was a yellowish green, like that of a fading ecchymosis. He had been having frequent nose bleeds since the 5th. By July 18th the pain was entirely absent and the mass was gone so far as I could discover.

December 3rd he was loading baled hay. The next day the right shoulder muscles were stiff. On the fifth a mass the size of half an orange was present in the posterior axillary region on a level with the tip of the scapula. This swelling was firm, sharply defined and tender. On the 7th the mass seemed no larger but the skin was more tense and had a bluish discoloration at the lower margin of the tumor. On the 8th the swelling had extended into the axilla, the right arm was edematous and the pain was intense, requiring morphine. December 9th the pain was less, ecchymotic discoloration had extended to the summit of the tumor, and the central portion of the mass was softer. December 10th the mass was quite soft and lines similar to lineae striatae of pregnancy had appeared in the skin. December 11th he had less pain but the mass in axilla was larger, the size of a large grape fruit. January 15th, 43 days after the first pain, the mass was still the size of half of a small orange.

May 2nd, stepped on a nail. Very small amount of bleeding.

July 24th caught tip of ring finger in a hay pulley which produced a lacerated wound and cut through the nail one-fourth inch from the tip. The bleeding was not especially troublesome. July 26th, careful removal of the dressings caused very free bleeding. Two c.c. Merrel's Fribrinogen was given. July 31st, wound still bled when the dressings were removed. August 5th, 12 days after the injury, the wound looked good and there was no bleeding. August 8th, a small amount of pus under the tip of the nail, no bleeding. August 13th, the injury was healed.

On Monday, February 28th, the left knee was stiff, patient claimed the muscles seemed short, March 1st, a swelling was noticeable, and March 2nd the knee was greatly swollen and painful. Anteriorily this swelling was chiefly above the patella and extended down posteriorly into the popliteal space. The pain was described as drawing and was relieved by motion.

March 10th, he complained of pain on swallowing. March 11th there was a submandibular swelling, and the mucosa of the floor of the mouth was dark blue though not elevated. He complained of stabbing pain in left knee each time he swallowed though the knee was less swollen and painful than it had been.

March 12th, the swelling of the floor of the mouth was prominent, the elevation of the mucosa gave the appearance of a cock's comb. Swallowing was more difficult, submandibular region markedly swollen. March 13th, the knee was much better. The right side of the lower jaw was associated with the submandibular swelling. The hemorrhage into the floor of the mouth had elevated the mucosa so that it stood above the crowns of the teeth, covering them in places. It was impossible to close the jaws without biting these tissues. March 15th, the swelling in the floor of the mouth was considerably reduced, swallowing was less difficult. The submandibular swelling was smaller. The knee was practically normal in size.

March 21st, the patient developed pain in the right upper lumbar region. Intense nausea accompanied the pain and vomiting gave some temporary relief. I suspected a hemorrhage into the kidney but hematuria did not appear and from that time on he made a rapid recovery.

It is my opinion that Hemostatic serum P. D. and Co. checked the tendency to bleed more quickly than any other method I have used. Coagulation time of the blood before using this preparation was 4 hours and 27 minutes (method of Howell). Twelve hours after the third dose it was 48 minutes. During none of these attacks did his temperature rise above 99½ F. Pulse from 66 to 124.

This boy is now 19 years old and should begin to show a decrease in the hemophiliac tendency. A coagulation test has not been made since March 21st. It is hard to get him into the office unless he is sick. I expect him to have another bleeding attack within six months unless our treatment prevents it.

SUMMARY

The hemophiliac tendency should be given more attention if our mission of trying to preserve life is to be fulfilled.

In our community the preponderance of male over female offspring is not evident in hemophiliac families.

In one family both boys were bleeders, in another two of five boys were bleeders. The male offspring of only one of the three sisters show the bleeding tendency.

The fact that at times our patient has injured himself and not bled profusely, while at other times he had bled profusely without injury would suggest that the tendency to hemorrhage is periodic.

DISCUSSION

A. B. SOMERS, M. D., Omaha: This is getting a little bit out of the field of this paper, but I have a few things I want to say about bleeding in infants and those who take care of obstetrical cases. I have known a good many infants to die from bleeding. I never knew one to die that was treated promptly with serum. Bleeding in babies must be regarded as a serious condition. There may be bleeding in sight. It may come from any mucous membrane, even the eyes. It may be an ecchymosis under the skin in which no blood appears. If so, it may begin with a small spot which gradually increases. You wonder whether the child received some trauma during birth which accounts for it?

What I want to say is just what I said in regard to the early diagnosis, as the condition in a newborn infant is serious.

The next thing is the fact that serum will cure them absolutely if you give it, and give it promptly. You may not have a hemostatic serum at hand. You cannot send to Chicago or Omaha, or Denver to get that serum. You want to do it now. Perhaps you have some antitoxin, so good and well. It is a horse serum with antitoxin added. You can use quite a large quantity of it. You want to use the mildest form.

Supposing you do not have either. In a short time, if you can bleed a horse or human being, you can get the blood serum. Let the blood coagulate and use the serum. Have it sterile.

If you cannot do that, take a syringe and draw pure blood out of some good healthy adult and inject that.

Be careful to recognize these symptoms of bleeding in an infant. Be exceedingly prompt in giving some form of serum — hemostatic, if you have it; diphtheria anti-toxin, or serum which you can manufacture in a short time from fresh blood, or the fresh blood itself, and they will get well.

CHARLES LUCAS, M. D., Shelton: I have been doing general practice for thirty years next month. During that time I have had considerable obstetrical work, and for the first time in all these years, I ran across a case of severe hemorrhage in a newly born infant, two months ago. The child, on the second day of its life, developed a severe hemorrhage from the intestines. It was eleven miles in the country. It so happened I had no hemoplastic serum or antitoxin. The child was in a state of collapse — very cyanotic. About 10 c. c. of the mother's blood was drawn and injected subcutaneously, and the hemorrhage diminished markedly after that. For two successive days I gave hemoplastic serum, and the child made an uneventful recovery.

FLOYD CLARK, M. D., Omaha: I want to say a word about the treatment of these children with hemophilia. At times it is difficult to get into the jugular. One wants to get the blood in as early as possible. For that reason, on one or two occasions we have injected blood into the peritoneal cavity with better success than injecting it subcutaneously. We have had no bad results from injecting blood in this way.

The only thing I want to state in the way of therapeutic measures is the suggestion by Still, of London, which has stayed in my mind very prominently, and that is the use of gelatin. If you have not the facilities always for injecting blood, the administration of gelatin by mouth sometimes seems to check these hemorrhages. Dr. Still makes the statement he considers gelatin administered by mouth has much of the same value as putting blood into the infant. These cases are desperate, and desperate means must be resorted to. It seems to me the quicker you can get the blood into the baby, the better. I wish to call attention to the intraperitoneal route.

WALLACE A. GERRIE, M. D., Omaha: I have recently had a case of a small boy who came in for hemophilia. In working out the family history, we found in four generations there were twenty-one males died from hemorrhage of some part of the body. Contrary to the usual belief that death occurs as children or young adults, most of the members of that family had died between forty and fifty.

We worked this out in connection with a doctor from Kansas, and the results of this study will be published soon.

In speaking of the clotting time, the Doctor mentioned four hours. There is a great discrepancy in the clotting time, depending upon which test you use. I believe one ought to tell the test he uses.

Our treatment of this boy was calcium lactate and fibrogen. We got a nice result, but the outlook is bad.

H. B. LEMERE, M. D., Omaha: Mr. President: I wish to report a case that came to the University of Nebraska about a year ago — a young man about nineteen years of age who was a student injured in a football game. Shortly after the injury, his nose bled. He attributed it to the injury he had received, although it was not immediately after the injury. He continued to bleed about two weeks, before he was presented at the hospital for treatment. At that time his hands were transparent, his lips colorless, and he was very much exsanguinated.

I saw him the day following his admission to the hospital. He had a nasal hemorrhage the previous day and I had been requested to pack the nose. When I saw him, there was no bleeding from the nose, and no signs of an area from which bleeding might occur. I delayed packing the nose. The next day he had another hemorrhage. I examined the nose carefully but could find no bleeding point, the hemorrhage apparently issuing from the capillaries all over the mucous membrane to the nose.

The case ran along ten days before death. He had transfusion and everything was done that was humanly possible to check the bleeding. It would stop and return. Post-nasal packing would be left in as long as it was safe, and the day after removal there would be another hemorrhage. Different serums were used.

I had occasion to pack the nose the day before he died. At that time, as he has some cerebral symptoms, I thought to examine the fundus of the eye, and the picture was interesting. The retina was suffused with hemorrhages to such an extent that at the time of examination the optic nerve could not be distinguished from the rest of the retina. The hemorrhages destroyed all the land-marks.

In regard to the clotting time, it was not delayed for any length of time. When I packed the nose the last time, I collected some blood in the test tube, and immediately after packing, the blood was almost solid in the test tube. The blood was almost like serum. You would not think it was blood from the observation of it. The red blood corpuscles had almost all disappeared and the blood was almost without color. The bleeding time was very much delayed, so that we have to think of those two points: The clotting time and the bleeding time. In some the clotting time may not be much delayed, while the bleeding time will be delayed. The patient will continue to bleed although the blood will clot.

The post-mortem was shown in the State Medical Journal.

J. B. POTTS, M. D., Omaha: In regard to injecting the blood into an infant, I think the Doctor took the safe course in taking the mother's blood and injecting it. There are four types of blood, and if you inject a type that coagulated that infant's blood, you would probably have a fatal result, and might be worse off than if you had not injected it. But the probabilities are the infant's blood will not be coagulated with the mother's blood, so you are pretty safe in taking that. I do not think further that it will be a great while until we learn to type blood.

The easiet place to inject blood in an infant is the fontenelle. You can all hit that. If you want to inject it into the jugular, all right.

There is another thing about this: A lot of people are periodic bleeders. I do not know that anyone has ever established why. Their clotting time and coagulation time are within normal limits, yet we will run onto a case occasionally with no history in the family, and still those men have this type of bleeding. The only thing I can think of to explain this is there must be something that renders the blood vessels permeable to the blood. This man had hemorrhages in the nose and hemorrhages in the eye.

For the last three years, every nose and throat patient in the Clarkson Hospital has been tested for coagulation and bleeding time. Strange to say, in watching the post-operative hemorrhages, there have been some with a relatively shorter coagulation and bleeding time than others that have not hemmorhaged. There is just a little question about it. Because a man has a coagulation time of two muintes does not mean he won't bleed, because of some particular condition of his blood vessels. That won't prevent you from having post-operative hemorrhages, but probably will prevent you from operating on true hemophilias.

QUSTION: Is it necessary to type the blood for subcutaneous injection?

DR. POTTS: Just intravenous.

DR. CONRAD (closing): I wish to thank the gentlemen for their liberal discussion.

The statement Dr. Potts made reiterating the fact these bleeding times seem to be periodic has been impressed on me. This fellow goes three or six months and shows but a slight tendency to bleed, and then he will get a whopper! It is a mighty unpleasant thing to be bucking up against.

The mother's blood injected subcutaneously at time of birth has been used quite a time.

I was glad to hear Dr. Clark suggest injecting it intraperitoneally.

Transfusion is of great value. It seems to me there are times when absolutely nothing will stop it, as in the case which Dr. Lemere cited.

As regards the test used in determining the coagulation time, it was Howell's test, which is more convenient in the country, possibly, than in the city, of collecting the blood in the test tube and leaving it until the clot is so firm it will not budge by inverting the test tube.

SAFETY FIRST

Neurich—"Be sure you get a good-looking nurse for my baby."

Mrs. Neurich—"Why."

Neurich—"I want him to have police protection—" Medley.

The shades of night were falling fast,
A man "stepped on it" and rushed past.
A crash—he died without a sound.
They opened up his head and found,
Excelsior!

STUDIES IN ATYPICAL TABES DORSALIS, WITH LEADING POINTS ON DIAGNOSIS

A. E. Bennett, M. D., Omaha, Nebraska

The purpose of this paper is to point out some mistakes that are made in the diagnosis of the incomplete or atypical form of tabes dorsalis. (These mistakes at times lead to needless surgical operations). It is also my purpose to illustrate with a case report, facts long recognized in neurologic circles, but at times overlooked in general medical and surgical fields.

It is now over 50 years since Charcot first linked up gastric crises with tabes dorsalis as a cause of acute abdominal distress and emphasized the fact that preataxic crises may occur years before locomotor trouble. He also described the "formes frustes" or atypical types with this condition. Even with improved methods of study and diagnosis of our cases, we still see far too numerous mistakes. Some of the reasons for these errors are — First: That the cases usually having crisis are not typical. Many cases, probably one-half, deviate from the text book picture of tabes dorsalis, which any layman can recognize in the end stages as locomotor ataxia. The cases differ either by the presence of rare symptoms or the symbiosis of other associated diseases. Second: We fail to make a correct interpretation of the case because too often the disease is not looked for. Hurried histories, incomplete examinations particularly neglecting the nervous system, and a failure to remember that the root pains of cerebrospinal syphilis may simulate almost any abdominal lesion, account for many errors. Third: in doubtful cases spinal fluid examinations are not resorted to frequently enough. A few physicians are still under the impression that a negative blood Wassermann test rules out neurosyphilis, of course, we now know this is not true. In some of these doubtful cases an exploratory laparotomy has been done where a spinal puncture might have settled the diagnosis. In a small per cent of cases the spinal fluid examination will not clinch the diagnosis as illustrated in my case, but in the large majority of instances this examination would settle the question.

Thus it seems worth while at this time to review the known facts in the hope of stimulating more careful study of these patients and preventing more misery to this legion of chronic sufferers by needless abdominal operations. These patients go from one physician to another, often begging for operative interference in the vain hope of relief from their disease.

The following case report presents many interesting facts in the ten year course of the disease. Records were obtained from the various hospitals in which the patient received five major abdominal operations. In all his numerous admissions to various hospitals no one seems to have entertained the possibility of tabetic crises as a cause of his recurrent attacks of abdominal distress.

CASE REPORT:

Mr. J. T., age 44, first came under my observation at the Philadelphia General Hospital, April 5, 1923. He complained of attacks of pain in the abdomen, with vomiting. At 19 years of age he contracted a chancre and received six weeks of treatment. He had no secondary eruption. In 1912 he began having attacks of sharp cutting, shooting pains in the back, abdomen and legs accompanied by vomiting. These attacks at times lasted two weeks, recurring at intervals of four to five weeks. In July, 1913, he was admitted to a well known Philadelphia hospital for an exploratory laparotomy. The surgeon found the stomach normal; no masses, pylorus normal, the liver smaller than normal with many small nodules "hob nailed" and gallbladder normal. The appendix was retrocecal but apparently normal. The diagnosis was "cirrhosis of the liver". He was discharged in six weeks only to return one week later with an attack of pain and vomiting. Another surgeon advised operation and this time a posterior gastroenterostomy was done. The liver was found cirrhotic and there were a few adhesions about the pylorus. The abdominal organs were otherwise normal. He continued to have the same attacks at irregular intervals, returning to this hospital off and on until August, 1921, when a third operation was performed, which was advised against by the surgeon but insisted upon by the patient. This incision was over the gallbladder. Multiple adhesions were found and the abdomen was closed without interference. It should be stated now that in addition to his attacks of pain and vomiting since 1918, he had urgency, precipitancy and dribbling of urination. Since 1920 he had lost his sexual power. Following his third operation the attacks persisted and in June, 1922, he was admitted to another hospital on the service of a well known surgeon.

Here another exploratory operation was performed; innumerable adhesions were found and after working for two hours the surgeon abandoned the operation. In two weeks the same old attacks returned and were only relieved by morphine.

In September, 1922, he was readmitted, on another well known surgeon's service, because of persistent vomiting. At this time a very complete study was made from a general physical and laboratory standpoint but no mention was made of the nervous system. His general physical status was essentially negative as were all laboratory tests including, a blood Wassermann. The gastrointestinal study revealed a marked stasis in the ileum and a gastrojejunal ulcer was considered. The surgeon who later reported the case in the Surgical Clinics of North America states in his report, "The patient begged me every day to operate on him. I kept him in the ward long enough before the operation to be sure that he really was suffering and not merely neurasthenic". He felt the trouble was due to a vicious circle in his former gastroenterostomy. At the fifth operation he also found adhesions everywhere and with difficulty dissected the jejunum from adhesions, found no ulcer, but the duodenal loop was obstructed so the old anastomosis between the jejunum and stomach was separated. Four days after this operation the patient again vomited. More x-ray studies were made, all efforts were focused on finding a cause within the abdomen, the possibility of root pains seems not to have been considered. The surgeon's further report is interesting because of his interpretation of the case: "The only criticism that I think I could make in addition to condemning the unnecessary operations which have been done upon him, is that he has never had his appendix removed and perhaps I should have done it myself, but he had enough trouble when he was under my care to make me willing to postpone that for another occasion".

The patient continued to have his attacks before and after admission to the Philadelphia Hospital. A complete neurologic study revealed the following facts: Inequality of the pupils with the right pupil reacting slower to light than accommodation, diminished pain sense over the left lower thoracic region and over the left leg below the knee. The knee jerks were both active; the right achilles was absent and the left was subnormal with hypotonia of the leg muscles, there was no ataxia. A cystoscopic examination revealed a relaxed vesical sphincter, the musculature looked like that seen in tabetic bladders, the posterior urethra was anesthetic. The urologist stated the urinary frequency and urgency was entirely due to failure of proper innervation of the bladder musculature. Complete laboratory studies, including gastric analysis, blood chemistry and gastrointestinal x-ray were essentially negative. Two blood and spinal fluid Wassermann tests were negative. A diagnosis of atypical tabes with involvement of the thoracic and sacral segments was made, but not sufficient lumbar involvement to catch the patellar reflexes. He was given 16 neoarsphenamine injections and discharged in July, 1923.

The patient again came under my observation in September, 1923, at the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases on the service of Dr. F. Sinkler. He gave the same old complaint. Serologic studies of the blood and spinal fluid were again entirely negative. The neurologic status was the same as before except that he now showed a right sided Babinski reflex. After several severe attacks of pain and vomiting he was given four Swift Eillis intraspinous injections, after these he showed a bilateral Babinski. The blood Wassermann's were always negative but a provocative reaction from the intraspinal injections produced a strongly positive spinal fluid Wassermann for the first time and gave a gold curve of 455432100. The fluid a short time later became negative. He continued to have attacks of pain in the abdomen and legs usually accompanied by vomiting. Several times he had peculiar attacks of sudden unconsciousness in which he became pulseless and respirations ceased for about 30 seconds(1). There was no convulsion and consciousness was regained in a few minutes. The patient had complete amnesia for the attacks. In view of his continued suffering without relief on vigorous treatment he was referred to Dr. F. C. Grant for section of his anterolateral columns. On March 12, 1924 a bilateral chordotomy at the 5th thoracic segment was done. Following this his attacks ceased until September, 1924. He dragged his right foot some and showed pain and temperature disturbance as high as the third lumbar segment but no Babinski reflex was present. His pain reappeared in a single point two inches to the left of the umbilicus accompanied with vomiting. Trophic lesions developed in the form of punched out crateriform ulcers about the size of a quarter over the anterior surface of the thighs and shins. Intraguteal injections of mercury were given, decubital ulcers formed at the site of the injections. In addition he developed an ulcerative cystitis and died Nov. 30, 1924.

A necropsy limited to the brain and spinal cord revealed the following findings. The cerebral hemispheres showed a definite edema with flattening of the convolutions. The pia arachnoid was definitely milky and slightly thickened. The dura mater was slightly thickened. The spinal cord showed a distortion at the level of the operation and a definite thickening of the meninges ¼ cm. was present over the posterior surface in the lower sections. Microscopic sections of the cord revealed much new connective tissue formation in the lateral parts of the cord at the site of operation. Complete degeneration was present in the cerebellar tracts. The posterior columns were only slightly affected. In one section a unilateral change was present in the column of Burdach. The anterior horn cells showed definite atrophy and degeneration.

Comment: The case requires but little comment since the story is clear and the findings positive. It should be said that no mention was made in the other hospital reports of a chancre history and it is possible the patient concealed this fact. It is indeed surprising that five different surgeons failed to consider a neurologic disorder, when after each operation he had not obtained relief from pain. The patient at various times begged for operations as they often do in the hope of relief, but this should not be sufficient excuse for surgery. From a neurologic point of view the atypical findings of the disease are instructive. In twelve years there were no locomotor signs, only suggestive pupils, hypalgesia over the lower thoracic region and left leg, and one absent achilles jerk. The serologic studies which were repeatedly negative and only positive from provocative reaction illustrate the fact that a negative spinal fluid Wassermann does not rule out cerebrospinal infection in old or treated cases. The relief from pain obtained by section of the anterolateral columns was instructive and should have been done years before instead of the other operative procedures. This operation is indicated in chronic cases where no relief is obtained from treatment and the suffering incapacitates the individual.

The incidence of gastric crises is given as occurring in ten per cent of tabetics by Starr(2), Holmes(3), Hall(4), and Leimbach(5). Lucke(6) found 12 per cent of 250 cases had visceral crises. Bonar(7) found 16.78 per cent of 286 cases had gastric crises, while Nuzum(8) found in 1,000 cases tabetics crises occurring in 22 per cent. It is impossible to estimate from the sparse literature the frequency of operative mistakes in these cases. There are numerous scattered reports of isolated cases where from one to three operations were performed with no relief of symptoms: only to have the syphilitic etiology later proved and the patient's symptoms relieved by treatment. All the reported cases are by internists or neurologists and none are to be found in the surgical literature. Here one only finds occasional casual reference to the frequency of such mistakes. There are a few collections of cases from various clinics that give us some idea of the frequency of mistakes in surgical diagnosis in these cases.

Nuzum(8) reviewed the records of 1,000 tabetics from the neurologic service of Cook County Hospital and found 97 needless laparatomies had been performed on 87 of these patients. Of these, diagnoses of gastric ulcer and gall bladder disease were the most frequent, with the diagnoses of appendicitis a close third. Operations had also been performed for almost every other type of abdominal lesion. Several patients had been operated upon several times. After the first incision, post operative adhesions seem to be a favorite excuse for having a second, third, fourth or even fifth "look in."

Woltman(9) found from 120 patients having syphilitic gastric crises that 25.8 per cent had been subjected to unfruitful surgical interference and 61 operations had been performed in this group. The appendix was the most frequent supposed offender in his series, with the gall bladder second and the stomach third .The pelvic organs, kidney, colon, postoperative adhesions and in some cases exploratory laparotomy were given as diagnoses. It is surprising the number of instances in which repeated operations have been performed, on the same patient, even after no pathologic lesions were found in previous exploratories, and the history obtained showed that no relief was experienced from previous operations. No suspicion that a neurologic disorder might account for the symptoms, ever seemed to have arisen, even after four or five surgical failures.

It is also interesting to find, in these cases as well as in other reflex or functional nervous disorders how often post operative adhesions are blamed when a correct diagnosis has not been made. Ziegler(10) in a study of 164 psychoneurotics found 18.3 per cent had received one or more major abdominal operations for the relief of psychoneurotic symptoms, all without avail. No report was found of a tabetic having had more than five abdominal operations. Holmes reports a case that had five abdominal operations performed before a correct diagnosis of tabes was made. One patient in Nuzum's series had been subjected to five laparotomies with no relief of symptoms. The last three were made for post operative adhesions. Woltman, Newburgh(11) and Tuohy(2) report cases upon whom four major abdominal operations had been performed before complete neurologic and serologic studies proved the correct etiology to be syphilitic radiculitis. In my case the five operative descriptions have been given.

Difficulties in diagnosis are not so marked in the well advanced ataxic patient, where we find the absent deep reflexes, Argyll Robertson pupil, positive Rhomberg and other classical symptoms. The fact that the so-called typical pictures are the exception rather than the rule cause our difficulties. There is no one symptom that may not be absent. For example we hear it said, tabes was ruled out because the knee jerks were present. The knee jerks may be normal; exaggerated in both; normal in one and diminished in the other or both absent. The reflex changes depend upon the location of the morbid pathologic process e. g. unless the lesions extends to the 4th lumbar segment of the cord the knee jerk will be present, or if the first sacral segment is not involved the achilles jerk will be present. Also if there happens to be accompanying lateral column disease the reflexes may be exaggerated. The preataxic stages before extensive degeneration of the posterior columns occurs is the time in which most crises occur. This was true in my case, there was but slight posterior column degeneration. Crises may last for years, (18 years according to Oppenheim(13)) without marked reflex alteration. As a matter of fact the knee jerks are not absent in over 75 per cent of early cases. Hall for example in 100 cases found them absent in but 65 per cent; present in 22 per cent, exaggerated in 4 per cent and unequal or sluggish in 6 per cent. Frey(14) found them absent in 56.47 per cent of 850 cases. Collins(15) reports 77 per cent of 140 had absent knee jerks in the preataxic stages and 84.3 per cent in the well advanced stages. Statistics from various clinics of large groups of cases in the later stages show higher percentages with absent patellar reflexes. Thomas(16) in 111 cases reports absent knee jerks in 81 per cent. Mendel and Tobias(17) found them absent in 82 per cent, Lucke in 90 per cent, Leimbach in 92 per cent and Bonar reports 95 per cent of 286 cases had absent patellars. Riley(18) states 90 per cent of 61 cases had absent knee jerks. He also in another report gave seven cases of tabes with knee jerks retained or exaggerated.

The same thing is true for the Argyll Robertson pupil and Rhomberg's sign. These classical signs are present in only a little over half of the early cases. In such a disease with variable symptoms and signs we must take the picture as a whole to establish a diagnosis. The following combination of symptoms and signs in order of frequency would catch most cases: The history of onset with the development of the subjective sensations is important. The story of the lancinating pains as though shot, occurring irregularly, of momentary duration leaving behind an intensely sore spot is another. These pains may be the only complaint for several years with no objective neurologic findings present except a positive spinal fluid. The paresthesias: a sense of numbness in the feet with a feeling as though walking on air or associated with an uncertainty in placing the feet without looking or a girdle sensation about the abdomen are usually early symptoms. Pupillary changes such as inequality, irregularity, with often a loss of the consensual reflex are present before the Argyll Robertson pupil appears. The common chest zone anesthesia with loss of pain sense more marked than the touch, also hypalgesic areas over the face, thorax or extremities are early findings. These patients early cannot recognize the vibration of a tuning fork over the malleoli, patella or sacrum or tell in what position the toes are placed. The loss of the normal muscle, testis, ulnar or achilles tenderness from pinching is often striking. The achilles jerks are often diminished, unequal or absent before the patellars. Many patients early in the disease complain of urgency, precipitancy or incontinence of urination and beginning impotence. Isolated cranial nerve palsies, eye symptoms (diplopia, ptosis) or primary optic atrophy may be early signs in certain cases. When the disease is well advanced there will usually be, ataxia, Rhomberg's sign, and unequal, sluggish or absent knee jerks. These latter findings when present are of extreme value but their absence does not necessarily rule out tabes. To establish an absolute diagnosis in all cases of doubt, spinal serologic studies should be done. An increased total proteid content, pleocytosis and a positive Wassermann are generally present, remembering that in late tabes but 75 per cent are positive. A provocative reaction in negative cases will bring out more positives.

There are many facts lost through faulty technic in a neurologic examination, especially the early changes. In studying pupils it is important to study contour, size and equality as well as taking the consensual light reflex, because often there is a loss of response when the light is thrown on the opposite retina before the typical Argyll Robertson phenomenon appears. Another important point in pupillary examination is to avoid the accommodation reflex in testing for light reaction, by having the patient focus on a distant object, then play the beam of light in from the side of the eye. The tuning fork test and achilles jerks are too frequently neglected. To obtain the achilles jerks it is important to have the patient in a comfortable kneeling position with the gastrocnemius muscles relaxed.

Gastric crises may simulate any gastro-intestinal condition and may appear early in cerebrospinal syphilis, even being the sole complaint before any of the older signs of the disease are present. Even then they are fairly unique in their manifestations. They may be present either as pain or vomiting alone, or both together, which is more common. The onset is usually sudden with midline pain, without reference to meals or the character of food. The pains are dull or sharp, often shooting and of agonizing character associated with sialorrhoea, extreme nausea and vomiting, and great prostration and lasting a few hours to several days. Then the pains cease abruptly, with surprisingly rapid recovery of the patient, only to recur again in a few days, weeks or months. During the attacks while the abdomen may be hypersensitive to light touch there is no deep tenderness to palpation and there is no muscular rigidity. The attacks are almost always afebrile, in rare instances there may be pyrexia but without leucocytosis. Often relief is obtained by a hypodermic of adrenalin and in gastric crises after adrenalin the blood pressure usually falls instead of being increased as in the normal reaction. In a differential diagnosis it should be remembered that crises are not always typical and do not always commence and end suddenly but may be present as vague gastric distress. The attacks with severe retching and vomiting without pain is particularly hard to determine. Intestinal, rectal and bladder crises also occur. It should not be forgotten that hematemesis may occur in crises, but, of course, this should excite suspicion of an organic lesion. Then the possibility of a coexistent gastro-intestinal lesion with tabes such as gastric ulcer(20) should be kept in mind. The possibility of the unusual condition of syphilis of the stomach must also be considered.

This report is not given in the spirit of criticizing the surgeon who is unfortunate enough to operate upon such patients. He cannot be expected to be a neurologist and often these atypical cases are extremely difficult of diagnosis. For the patient's welfare and the surgeon's happiness he should study his patients carefully, especially those with recurrent abdominal attacks presenting scars from previous operations and those who give a history of 'no relief' following previous operations or "nothing wrong was found." Whenever in doubt it is far safer to have a complete neurologic study and a spinal fluid examination made and more satisfactory in the end than having opened an abdomen by mistake.

SUMMARY

Atypical or formes frustes types of tabes are the most frequently missed form of the disease. Gastric crises in this variety often lead to unnecessary abdominal operations.

Incomplete histories, careless examinations and infrequent spinal punctures in doubtful cases account for most errors. Gastric crises occur in from 10 to 20 per cent of all cases of tabes dorsalis.

Reliable reports indicate that more than 10 per cent of tabetics have needless operations performed at least once upon a mistaken diagnosis. There are frequent reports in the literature of patients having had four or five abdominal operations when the cause of the symptoms was root pains of syphilis.

The classical signs of tabes are absent in approximately one-half of the early cases. when abdominal pains may be present. The knee jerks are normal or exaggerated in at least 25 per cent of early cases. The same applies to ataxia, Argyll Robertson phenomenon and other later signs. Approximately 10 per cent of cases remain atypical throughout the entire course of the disease.

A complete life story of the individual with a careful analysis of the onset and development, a careful neurologic examination and a spinal fluid study should be made where there is the slightest doubt as to a diagnosis.

In patients presenting recurrent abdominal attacks with no relief from prevous operations, the possibility of an atypical form of tabes dorsalis should be very firmly impressed upon the minds of surgeons, in order to decrease the all too frequent incidence of unnecessary operations upon tabetics.

BIBLIOGRAPHY

1. Hoover, C. F. The Sudden Appearance of Apnea in the Course of Tabes Dorsalis and Arterial Sclerosis. J. A. M. A. 49:237 July 20, 1907.
2. Starr Organic Nervous Diseases pp. 294-302. Lea & Febiger Philadelphia 1903.
3. Holmes G. The Diagnosis of Tabes Dorsalis. Brit. Med. Jour. 1:573 March 14, 1914.
4. Hal, G. W. Tabes and the Surgeon Ill. Med. Jour. 18:529, 1910.
5. Leimbach, R. Statistiches zur Symptomatologie der Tabes Dorsalis Deutsch. Ztschr. f. Nervenh. 7:502 1895.
6. Lucke, B. A Pathological and Clinical Study of 250 Cases of Tabes Dorsalis Jour. Nerv. & Ment. Dis. 43:393, May 1916.
7. Bonar, A. B. A Study of Cases of Tabes Dorsalis Jour. of Nerv. & Ment. Dis. 28:259, May 1901.
8. Nuzum, J. W. Needless Surgical Operations From Failure to Recognize Tabes Dorsalis. Jour. Am. Med. Ass. 66:482-485 Feb. 12, 1916.
9. Woltman, H. W. The More Common Neurologic Disorders Associated with Pain and Encountered in General Diagnosis. Minn. Med. 7:193, March 1924.
10. Ziegler, L. H. Some Observations on Psych-

oneurotic Ex-Service Men. Mental Hygiene 9:128-156. Jan. 1925.

11. Newburgh, L. H. Gastric Disturbances as a Part of Central Nervous System Syphilis. Jour. Mich. Med. Soc. 17:100 March 1918.

12. Tuohy, E. L. Gatric Crises and Related Abdominal Pain. Minn. Med. 1:241 July 1918.

13. Oppenheim Textbook of Nervous Diseases. Trans. Alex Bruce pp. 145 1911 T. N. Foulis London and Edinburgh.

14. Frey, E. Uber klinische Formen, Symptomatoligie und Verlauf der Tabes auf Grund von 850 Fallen. Ztschr f. d. ges neurol. u. Psychiat. Orig. 14:36, 1912.

15. Collin, J. The Symptomatology of Tabes an Analysis of 140 Cases, Medical News 82:7, March 14, 1903.

16. Thomas, H. N. An Analysis of the Cases of Tabes in Johns Hopkins Hospital up to 1898. Bull of J. H. H. 10:54 1899.

17. Mendel, K. Tobias E. Die Tabes der Frauen. Monatschr f. Psychiat U. Neurol. 31:155, 1912.

18. Riley, W. H. A Summary of the Symptoms in 61 Cases of Locomotor Ataxia with Additional Remarks. Jour. of Nerv. & Ment. Dis. 25:679:697, 1898.

19. Report of Seven Cases of Tabes Dorsalis with the Knee Jerks Retained or Exaggerated. The Physician and Surgeons of Detroit & Ann Arbor. 33:316, 1911.

20. Crohn, B. R. The Existence of Gastric Ulcer with Tabes Dorsalis Jour. Am. Med. Ass. 77: 2023, Dec. 24, 1921.

PROGRESS IN OBSTETRICS

W. C. Becker, M. A., M. D., Attending Obstetrician St. Elizabeth Hospital,
Lincoln, Nebraska

One of the chief aims of modern obstetrics is an unmutilated child and mother: This presupposes the avoiding of physical and psychic trauma and giving every aid to the mother in order that she may go through pregnancy normally and give birth to a healthy child. With this end in view, the science and art of obstetrics is making marked progress. The radical era with its high percentage of Caesarian section is being succeeded by a conservative period, brought about by various factors. Notably among these are refinements in methods and technique, such as Potter's contribution in the use of podalic version; the Kjelland forceps, which requires a correct diagnosis of the position of the fetal head; De Lee's prophylactic forceps, with or without episiotomy, which preserves the perineum; and in my opinion, the greatest of all is the increase of hospital facilities for obstetric patients.

Popular education in prenatal care has been influential in bringing obstetrical patients to us much earlier during the period of pregnancy. The younger generation usually expects adequate prenatal care. The sociologic and economic phase of this work augmented by the alleged neglect of the medical profession was the greatest force that prompted governmental and lay intervention, one of the results being the Shepard-Towner Act.

The minimum service to which every pregnant woman is entitled is a thorough physical examination, a bi-monthly examination of the urine, the removal of all foci of infection early in pregnancy if practicable, instruction in the manner of living and dietary regime. The weight-height balance is a very important factor in prenatal care. Much emphasis has been rightly placed on the danger of over-weight and the necessity of dieting to keep the gain to two pounds per month. I have seen, however, just as many patients who are underweight and, therefore, have an equally undesirable lessened resistance.

The principle of increasing resistance by bringing patients to a normal weight-height average is being used with marked success in the campaign against tuberculosis and in preventing the infectious diseases of childhood. It is a fact that underweight anaemic children and adults are more susceptible to infectious diseases than those of normal weight. Eradication of foci of infection, in the teeth, tonsils, sinuses, gallbladder, appendix or cervix, supplemented by proper diet, increases the hemoglobin and weight and renders the patient less susceptible to infectious diseases or the reactivation of a dormant infection at the puerperium.

Jaccards statement that sepsis is due entirely to the carrying of infection to the mother by the attendants has done considerable harm to the medical profession. It is a well recognized fact that under practically ideal conditions and control, toxemias and fatal infections will occur, but these are rare. The history of puerperal sepsis has several historical landmarks. Oliver Wendell Holmes' advice to wash the hands with soap and hot water, the introduction of antiseptics by Semmelweis and the use of rectal examinations in labor have been outstanding contributions which have reduced morbidity and mortality. To these should be added adequate prenatal care, securing and maintaining a normal weight-height ratio, conservatism in operative interference and the prevention of exhaustion during labor.

When the young woman consults us for aid and advice during her period of pregnancy we should be able to assure her that pregnancy is a physiological function, and that if she will follow instructions she will pass through the period safely and give birth to her baby without complications. I wish to emphasize that with tact every precaution should be used to prevent fear or other mental stress from being needlessly or carelessly injected into the pregnant woman's problem.

Conservation of the patient's strength during parturition does not imply shortening the time of labor. With due respect to such master obstetricians as De Lee and Potter, I am confident that more harm is done to mothers and babies by hastening labor with version, forceps, or drugs than has been done by waiting, and our motto should be conservatism. The obstetrician is often tempted to use active measures when the family or patient demand that something be done. It is at such times in primipara and especially in prolonged labor that Gwathmeys Synergistic-Colonic-Ether method is applicable. This modern procedure is a valuable addition to our armamentarium and requires no expensive apparatus such as is required by nitrous-oxide-oxygen or ethylene-oxygen and is absolutely safe both in the home and in the hospital. This method depends on the synergistic action of morphine sulphate gr. 1-6 in 2 c.c. of 50% magnesium sulphate solution given hypodermically and a colonic enema of 2½ oz. of ether, 2 drams alcohol, 20 gr. quinine hydrobromide in olive oil. The exact technique may be found in several of Gwathmeys published papers. A few precautions should be observed. The patient must be in actual labor with effacement complete and dilitation beginning before the ether and alcohol enema is given. I have used instead of morphine sulphate gr. 1-6 a hypodermic injection of morphine sulphate gr. 1-8, hyoscine hydrobromide gr. 1-200, atropine sulphate gr. 1-200 in 2 c.c. of 50% magnesium sulphate solution. This dose is sufficient in most cases to give the patient considerable relief. If, however, the patient is not relieved, a plain water enema is given and after this is expelled, a 4 oz. enema of ether, alcohol, quinine hydrobromide and olive oil. In a patient weighing only 100 pounds it is well to reduce the dosage about one-third. Additional relief can be secured by repeating the magnesium sulphate injection, but I more often use nitrous-oxide-oxygen or ether inhalation. One outstanding result noticed is the relaxation of the cervix and perineum. The contractions are not affected and memory of pain is abolished. The patient is often somewhat delirious but in over seventy private patients I have seen no undesirable results to the mother or child. The good results are manifold. The patient is relieved; we can allow labor to proceed normally and not be annoyed by her importunities or those of her family; the relaxation of the cervix and perineum prevents a large percentage of lacerations; the strength of the patient, both mental and physical is preserved, and the number of forceps deliveries decreased. While it cannot be applied to all cases, nitrous-oxide-oxygen, ethylene, inhalation ether and chloroform all have their place and should be available but Gwathmeys colonic ether method is applicable and more practicable in a greater number of cases than any other one method.

TO SUMMARIZE:

1. The expectant mother has every reason to demand and to receive competent instruction for the maintenance of her physical and mental welfare and that of her unborn child.

2. Physicians are derelict in their duty who fail to observe the benefits that are derived by:
   a. Maintaining the normal weight-height balance in the mother.
   b. Careful painstaking examinations reduced to record.
   c. Scrupulous asepsis at the time of confinement.
   d. The application of analgesic methods which reduce suffering to a minimum without increase in the risk of life to the mother and child. Syngeristic-colonic-ether is a safe and efficient analgesic in prolonged labor.

This is an age of reason in the practice of medicine. Conservative methods and modern hospital facilities reduce morbidity and mortality.

3. Radical surgical procedures for delivery of the child except in very rare instances

are not in keeping with the best interest of the mother, child, the medical profession, and the social order.

VALUE OF CHLORIN IN THE TREATMENT OF COLDS

In the series studied by Harold S. Diehl, Minneapolis (Journal A. M. A., May 30, 1925), 425 students were given chlorin treatment, and 392 given medical treatment or no treatment. The percentages of patients cured with chlorin in one to three days and one to seven days differ but little from the percentages who recovered in the same time under medical treatment. Separate tabulations were made of the results obtained during the fall months, October, November and December, and the winter months, January, February and March, but the variations were of minor importance and inconstant. Of the total that were treated with chlorin, 51.4 per cent reported themselves cured within three days, while 47.9 per cent of those given medical treatment recovered in the same time, showing practically no difference. There was still less difference between the percentages that recovered under chlorin and medical treatments during the first week, 73.3 and 72.6 per cent, respectively. However, the percentage of cures within the first day is consistently higher with chlorin than with medical treatment. The difference is most marked if the colds are treated within the first three days, but the percentage of cures with chlorin is also higher for colds treated after the third day, and for the total number treated. The beneficial effects of chlorin evidently are experienced within the first day after the treatment, because each day after the first the percentage of recoveries is higher from medical treatment than from chlorin. The chlorin treatment apparently was more beneficial in acute rhinitis than in any other type of acute cold. Ill effects that could be definitely ascribed to the chlorin treatment occurred only in persons subject to asthma. The results of the treatment of whooping cough were somewhat encouraging, but not conclusive.

“Hygeia, says a well-known teacher of preventive medicine, has long been the Cinderella of the medical family. In spite of the progress of public health work, the medical schools have too generally neglected or slighted the preventive side of medicine. This has had an unfortunate result. The average physician fails to see as clearly as he should that he is a vital part of the public health organization, that he is expected to discover and to report communicable diseases, to instruct his patients, to support the local authorities, to help create sound public opinion.

“The Harvard Medical School, among others, is trying to impress upon its students the fact that the doctor has a duty not only to the individual but to the community. Every undergraduate is required to make a sanitary survey of a village, town, or small city. . . . . Harvard has also created a special committee, which will assist every teacher in the medical school to include in his courses the preventive aspects of his subject. If this can be done, hygiene will not be a thing apart but a body of knowledge and a point of view diffused throughout the curriculum. Toward the cost of this experiment the Foundation has made an appropriation.

“The successful teaching of hygiene to medical students will increase the number of well-trained persons who choose this field as a career, but no undergraduate course can fit men and women for specialized service in preventive medicine. This has become a recognized profession which demands appropriate training in the nature and causes of communicable diseases, methods of controlling them, sanitation, various aspects of hygiene, mental as well as physiological, vital statistics, sanitary laws, organization, and administration. Work in laboratories, library, and lecture rooms must be supplemented and applied by practical experience in the field.

“To provide this varied and intensive training special graduate schools and institutes of hygiene have of late been newly created or expanded in the United States, Canada, England, in Europe, and South America. In 1924 The Rockefeller Foundation, on the initiative of the International Health Board, made an additional gift of $400,000 to Harvard University for its School of Public Health, granted an interim appropriation for expenses of the London School of Hygiene and Tropical Medicine while its new building is being constructed, continued payments toward the building of institutes of hygiene in Prague and Warsaw, contributed to the maintenance of an institute of hygiene in Sao Paulo, Brazil, and pledged $650,000 to the University of Toronto for the expansion of its School of Hygiene and Public Health.”

THE NEBRASKA STATE
MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
Terminal Building, Lincoln, Nebraska.

F. A. Long, M. D., Editor—Madison, Neb.
R. B. Adams, M. D., Associate and Business Manager—Lincoln, Neb.
1012 Terminal Building, Lincoln, Neb. Tele. B2625.

COMMITTEE ON JOURNAL AND PUBLICATION.
F. A. Long, Chairman—Madison
W. O. Bridges—Omaha
B. F. Bailey—Lincoln
R. B. Adams, Ex officio—Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, not the carbon, submitted.

Reprints should be ordered from the printer, The Huse Publishing Co., Norfolk, Neb.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. X August No. 8

THE FAMILY DOCTOR

These are the days when ones physical powers are at their lowest ebb and no effort, be it physical or mental, is made without travail. Editorial writing comes well within this category and as the undersigned recalls his promise to our good and faithful editor, that he will supply an editorial for each issue of the year, he wipes the sweat from his brow and sets about to fulfill his promise.

Our editor is enjoying a well-earned vacation after years of relentless service as a family physician and as my thoughts go out to him I recall the beautiful tribute of Ward Ostrom published in Medical Economics:

"A man, whose mission in life it is to see humanity only at its worst; to whom people come only when in distress — a man, familiar with the sordid, loathsome elements of life; whose daily companions are disease and death; who, when all the cards are stacked against him, has courage to smile and fight bravely on; whose greatest successes are never known; whose trivial failures are on every gossip's tongue; who respects our confidences and understands our weaknesses; who, next to God in Heaven, is the greatest comfort in those moments of extremest sorrow, and who is discarded with as little ceremony as a worn out shoe, when, because of his wisdom and loving kindness, the danger is past. A man who is never paid according to his service and oftentimes, though that service has been great, is never paid at all.

So, down through the years he goes, like St. Patrick, driving before the snakes of disease; like Pan, followed in confidence absolute by the children, who in pain have known the sweetness of his kindly smile. Like unto that Great Physician—'a man of sorrows, and acquainted with grief', wending his weary way through the Valley of Shadows, but seldom reaching the mountain peaks of contentment and peace. Accredited with wealth, but generally poor, finding his reward in placing in the arms of a mother her first new-born child. In serving as no other man can serve; in being loved as no other man is loved; of laying down his tools at last, feeling that he has filled his little niche, done his small share to make this world a better and a happier place in which to live and a safer place in which to die.

All this and more — infinitely more — is or at least was the family doctor, who before the onward march of that very science he himself created, is passing out."

— Palmer Findley.

TEACHING THE PUBLIC, A PROFESSIONAL DUTY

The physicians' time and interests are largely occupied with taking care of the personal health problems of the individual employing him, medical ethics of the past have been evolved from that restricted relationship. Our complex social and industrial changes have made many additional problems, with their demands upon the profession for solution. The relationship of individual doctor to individual patient still obtains but added is the relationship of the profession as a whole to the public in general.

It is needless to enumerate the many ways in which scientific medicine has been applied to our general problems of sanitation, health preservation, the eradication of disease, etc. Much of this the public takes for granted, and has forgotten the original sources; the work of the profession. Great as has been the contribution of the profession in the past, it must be still greater in the future.

Teaching the public the fundamental truths of health and disease, that it may avoid the pitfalls of superstition, misinformation, and ignorance, must be a constant duty of the profession as a body and as individuals.

Quackery and cultism cannot exist except for more or less lack of information, or the presence of misinformation among the laity.

The general dissemination of truth cannot but raise the evaluation of medicine with the public, and increase its usefulness.

The American Medical Association, with its component State Associations and County Medical Societies, offers the best avenues of contact between the profession and the public.

The duties of each division should be governed largely by the nature of the problems worked on. Problems of local interest should be handled by the local societies, those of more general nature by the larger organizations.

The methods used by one of our County Societies may be given as an example of what may be done locally. This society has a committee of three elected from its membership known as the Public Educational Committee. At the call of this committee the society membership individually, furnish short articles written upon subjects of their own selection. These articles are gone over in meetings of the committee and then presented at special meetings of the County Society. There they are read and discussed and passed upon, the author of each article being unknown except to the committee. The approved articles are then presented to three of the county papers, which publish one of them each week simultaneously, under the caption of Timely Medical Talks — with the sub-title of the article, and signed by the County Medical Society.

Thus, fifty-two approved articles furnish material for the year, and come from a membership of twenty-two, and places no burden on any one of them.

Original articles are given preference, since it helps to keep up interest among the members and gives greater chance to handle local problems. Reference to the Cults and Quacks is avoided, also any references that may be construed as medical advertising; the author's name is left out for the same reason. Symptoms and treatment of disease being individual conditions are avoided. The topics are of general interest, and educational, with the object of teaching the public truths, and facts that will help the individual layman to co-operate with his medical adviser intelligently, in solving his personal health problems, and, also, to teach the community as a whole, to cooperate with the local profession in community health work. This plan has been in operation during the present year, and has proven very satisfactory to the profession and helpful to the public. It is felt that such a plan, continued regularly and continuously for several years will be very beneficial to both profession and laity.

— A. L. Cooper.

THE DEFENSE COMMITTEE

The Defense Committee finished the year 1924 with a record of eleven cases disposed of, and twelve cases pending. Going over these cases the writer finds that eight of them were against doctors living in Omaha and Lincoln. Of these, five were disposed of. There were fifteen cases against doctors living out in the state, and of these, six were disposed of. In only one of these cases was a judgment returned against the doctor, and it was for so small an amount that it could not be appealed.

However, the idea of this editorial was to help remove the feeling held by many doctors out in the state, that the Defense Committee practically benefits only Omaha and Lincoln doctors.

The total membership of the association for 1924 was 1179. Of these members, 426 lived in Omaha and Lincoln, and 753 lived out in the state; or in other words, not quite two-thirds of the members were from over the state. Also, with fifteen cases against the rural doctors to eight against the urban, the proportion is about the same.

These figures show that the Defense Committee is asked for aid in about the ratio that it should be. On the other hand, there are always several suits in the cities each year in which the Defense Committee is not asked for aid, and this seldom happens with members out in the state.

— R. B. Adams.

LENGTHENING HUMAN LIFE

People today live eighteen years longer than they did in 1855. Fifty-eight years is now the average life time, then it was forty. Our life span is twice that of British India and more benighted countries. This improvement is due largely to preventive medicine and public health movements. Growth in industrial life, the spread of democracy, and the wider benefits of public education have been additional factors in this remarkable changes.

The frequent appearance in print of these facts have lead to some misinterpretation. The misunderstanding is due principally to the fact that the statistics quoted are population statistics and include all ages from birth and all people. But adults who attain the age of thirty have not shown any considerable increase in the length of their probable after life time since mortality tables have been made and used. The earliest known mortality table, 225 A. D., gave the average after life time of a person age thirty as twenty-five years. The Carlisle Table, made in Scotland in 1815, gives the average after life time of a man of thirty as 34.44. The Actuaries Table, published in England in 1843, which was the legal standard in the United States for policies issued prior to 1901, gave the duration of 34.43 years. The American Table, published in 1868, the present basis, gave 35.33 years. The American Men Mortality Table, corrected in 1905, gives the average after life time of a man of thirty as 37.7 years. Here is a gain since 1815, or covering a period of one hundred years, of 3.67 years only. The facts are that healthy adults accepted by insurance companies have a slightly greater after life time than they had one hundred years ago.

The worth of an adult above his personal expense is estimated at $500 a year to say nothing of the benefits his family may enjoy. If sanitation saves a young man to thirty or forty years of useful service to his family and community, who can estimate the advantage of all this salvage of human material in the past half century?

The most outstanding achievement has been the lowering of the infant mortality. In the last century one-half of the babies died. In America today about 7 per cent only, fail to live out one year. The goal is set for a mortality of only 3 per cent.

The decline in the death rate from tuberculosis destroys less than one-half the number it did in 1900, a saving of 100,000 lives yearly. Also those who died live to be older and thus have more earning power and longer to care for their children.

The typhoid, twenty years ago the scourge of our countries, is now of minor importance and shall soon be unknown.

Communicable diseases of childhood — diphtheria, scarlet fever, measles, and whooping cough are rapidly yielding to the newer medicine. Immunization against scarlet fever, as well as diphtheria, has been announced.

Diseases of middle life have not been checked; mainly those of the heart, arteries, and kidneys, have increased in frequency. These reflect types of personal hygiene practiced by individuals and can be reached only through early periodic health examinations. Especially dangerous are focal infections, such as infected tonsils, teeth, sinuses, gall bladder, and occasionally chronic appendicitis. These foci are the precursors of broken health. If these diseases of middle life can be prevented, there must arise benefits of great profit.

The value of the benefits of this sort of a campaign have been demonstrated by the Metropolitan Life Insurance Company. In 17,000 adult examinations, 13 per cent were over-weights. This is a fruitful source of breakdown of heart, blood vessels, and kidneys. Also heavy dentistry was found harboring bacteria about the teeth in 42 per cent. Infected tonsils were found in 25 per cent. High blood pressure in 7 per cent. All these conditions are remedial and if corrected in time prevent serious incapacitation and finally death.

In 1914 the Metropolitan inaugurated free periodical examinations to their policyholders. In 1920, 6,000 histories were studied. It was found that instead of 303 deaths that had been expected, there had been but 217. This means that they reduced the death rate 23 per cent. Physicians of today must acquire the new viewpoint and be teachers of personal hygiene. They must teach people how to avoid overweight, to conserve energy, and to follow simple rules of health.

The public can cooperate by turning to the family physician and by seeking examination while well, and not by waiting until illness overtakes them. The public must not leave all to the doctor. Attention to health throughout the year, and not periodically must be the habit of every individual.

— E .W. Rowe.

FRACTURES

In the pre-antiseptic period when all open surgery was feared, the treatment of simple fractures required a degree of knowledge and skill that stimulated the development of a high degree of art in their treatment. As an evidence of this, even outside the medical profession, there were "bone setters"; but no matter how skilled the manipulations, there always have been cases that baffled the most expert. Then came clean surgery to make possible anatomic restorations by open operations, and when deficiencies occurred, even they were supplied. Roentgenography then came and still further stimulated the necessity for a more accurate restoration of the normal.

With the ever increasing confidence and skill incident to the practice of aseptic surgery in all its realms of high achievement, as has been developed in the surgeries of the world, the field was so speedily invaded by all those who classed themselves as surgeons, that a flood of bad and even disastrous results followed. Those trained and experienced have, however, during the passing years, acquired tempered and rationalized surgical judgments, so that we have, therefore, arrived at the stage in fracture treatment, when we exhaust every means to properly reduce simple fractures, and operate only, under favorable conditions, when all reasonable efforts have failed. Even so, less is done than formerly and ordinarily a minimum of foreign material is used. In other words, a period has arrived when more time and skill is expended in the closed treatment of fractures, and in addition, such improved judgment in the selection of cases for operative intervention, and so standardized and refined an aseptic technic that no master surgeon hesitates to do open work on simple fractures where the indications are definite.

Warbasse says: "In the treatment of compound fractures, modern surgery has made advances which are not exceeded in any other branch of surgery. In general practice outside of the hospital, there yet remains much to be desired."

There cannot be a hospital at every crossroads, indeed, in some of the far reaches of this country, hours and even days may pass before proper emergency treatment, much less adequate hospital treatment, can be had. It is because of these inevitable conditions, therefore, that the responsibilities of us all become so great and necessitates so much of individual initiative, art and common sense in the management of fracture cases from the scene of the accident to the best available point for the ultimate treatment.

With the many resources at our command, it should be very rarely necessary to use plates in the treatment of fractures. As a commentary on this subject, it is interesting to remind ourselves that it is the frequent experience of operating surgeons that they remove more plates than they find it necessary to put in.

The surgeons' aim should be to avoid the introduction of foreign material into bones in the treatment of fractures wherever possible. Certain cases require some kind of fixation and there need be no hesitation within certain limitations. It is the unintelligent and indescriminate practices, that are objectionable.

For generations the profession had been content to accept as good and passable, considerable degrees of shortening in limbs after fractures. Open operations with anatomic restorations, and the tell-tale x-ray in those not properly restored, has brought demands upon us which have been measurably met as shown by improved results, since a general awakening of the profession to present day requirements.

While it is possible to maintain length with adhesive plaster extension, yet we all realize by ample experience, that the practice of its universal use is uncertain and fraught with many disappointments. The skeletal traction principle by use of the icetongs, or Steinman pin, furnishes a means of maintaining a dependable and definite length, and has been a distinct advance not yet sufficiently recognized, or practiced, as often as it should be in difficult cases, as especially illustrated in fractures of the femur.

The use of novacain locally permits the painless introduction of the tong points or of the Steinman pin and their presence is more comfortably borne than most of the ordinary plaster extensions.

The superior value of the Whitman abduction method of treating fractures of the small part of the femoral neck when the cases come to hand early, is now established, and union by bone is to be expected. Most failures result from too early weight bearing. The experienced now advocate 6 months of non-weight bearing, the last half of this period to be in a walking caliper giving adequate support. Those competent to advise now favor immediate nailing in the younger and most favorable subjects.

— J. P. Lord.

THE ANNUAL MEETING OF THE NEBRASKA ASSOCIATION OF MEDICAL WOMEN

The Nebraska Association of Medical Women held its annual meeting in Lincoln, on the evening of May 12, at the Grand Hotel. The members present, seventeen, representing Omaha, Lincoln, Nebraska City, Hastings, Wisner, sat down to dinner at 6

P. M., having with them as guests four premedic girls from the University, with their sponsor, Professor Hattie Plum Williams. Arrangements for the meeting were in the hands of the Lincoln officers—Drs. Inez Philbrick and Margaret Hammond—and Drs. Daisy Hanson and Ruth Warner. The large purple and white banner of the Lincoln Medical Women's Club, together with baskets of ferns, and table decorations of purple and white fleur de lis, made the small dining room very attractive.

The after-dinner program consisted of papers by Martha MacVean, of Nebraska City, on "Eight Years as a Public Health Official;" "Successive Premature Deliveries in the Same Mother," by Alace Kani, of Omaha; "Diet in the Arthritides," by Katherine Hunt, of Omaha; "Dysmenorrhoea," by Geno Beery, of Lincoln; "Exhibition and description of use of Uteroscope in Diagnosis of Intra-uterine Cancer," by Daisy Hanson, Lincoln.

Dr. MacVean, who on her husband's (Dr. Wm. Edmond's) going into the war service, was appointed to fill his place, and has since continued in the position, in her talk gave a very interesting glimpse of her experiences —humorous, annoying, satisfying. She stressed the necessity of fairness and impartiality on the part of the public health officer toward the general profession, and testified to the loyal support she had received from the local profession. She regarded her duties as school physician as the most hopeful and interesting of all, and discussed especially her interest in the establishment of an "Opportunity Room," for those pupils so deficient as to be unable to keep up in the grades.

Dr. Alace Kani reported a very interesting and instructive case that might well be taken to heart by all physicians who attend obstetric cases. A graduate nurse, who had been under acceptedly competent medical attendance in two previous labors, engaged Dr. Kani for a third, giving a history of having menstruated two or three times following conception in each former pregnancy, and having had two very slow and difficult labors, terminated by instrumental delivery of very small children, ventro-fixation of the uterus, and cervical repair having been performed after the second birth. Accepting former attendance and history as reliable, Dr. Kani, after manual dilatation, delivered at supposedly full term, a four and a half pound child, which lived but a few hours. Labor pains were very ineffective, and the duration was fourteen hours. Having later come to the conclusion that these labors were all premature, that there had been no menstruation following conception, Dr. Kani, in a subsequent pregnancy, put the patient to bed under sedatives, during two periods of regular pains, at five and ten minutes respectively, for two days and one day respectively, and delivered three and two months afterward respectively, an eight pound infant, normal in all respects, that has survived. The discussion of this paper voiced the general belief that women are being constantly delivered prematurely, with difficulty, and injury to mother, or at least, with unnecessary interference, and often with death of the child, because of the incompetency, or lack of conscience, on the part of the attendants.

Dr. Hunt, in discussing her subject, expressed the need to be the "feeding of the individual having joint trouble, with due regard to his nutritive needs, at the same time avoiding the use of the element or elements which may cause or exaggerate joint disturbances." She reported many laboratory investigations of diet in cases of arthritides in the soldiers of the World war, and stated that these investigations had placed the dietary control in the arthritides on a firmer foundation than had ever before been the case. She stated that "The chief field for dietetic therapy is that in which focal infection cannot be demonstrated or has been removed without further clinical improvement." The most essential change in diet has been found to be restriction in quantity of food taken, measured by calories, a reduction of 1,000 calories being often needed; in general, 30 calories to the kilogram of weight being the nearest approach to a definite rule, as to quantity to be taken. Proteids may be kept constant, fats increased, and carbohydrates must be limited.

Dr. Beery discussed dysmenorrhoea, as to definition, types, symptoms, and treatment —prophylactic, and curative. She discussed the virginal types as those due to tension, congestion, and spasm, and described them with reference to their origin, as uterine, arising in the appendages, or extra-genital; prophylactic treatment was stressed; curative treatment was classified as by glandular preparations, mechanical methods, drugs, and surgery, in the order of their importance.

Dr. Hanson exhibited the uteroscope, and described its use. She called attention to its size, as a distinct disadvantage. Discussion brought out protests against instrumentation in a pathological uterus as well as against the present-day orgy of instrumentation in general.

The officers elected for the coming year, are: Nora Fairchild, of Omaha, President; Rachel Cooper, of Aurora, Vice-President; Katherine Hunt, of Omaha, Secretary-Treasurer. The semi-annual meeting will be held in Omaha, in the coming October, or November.

AMERICAN BOARD OF OTOLARYNGOLOGY

An examination was held by the American Board of Otolaryngology on May 26, 1925 at the Medico-Chirurgical Hospital, Philadelphia, with the following result:

Passed	137
Failed	20
Total Examined	157

The next examination will be held at the University of Illinois School of Medicine on October 19, 1925. Applications may be secured from the Secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Missouri.

AMERICAN ELECTROTHERAPEUTIC ASSOCIATION

The American Electrotherapeutic Association will hold its 35th Annual Session, September 15th to 18th, at the Hotel Drake, Chicago, Ill. Papers will be read by the leading men in the field of physical therapeutics and by invited guests of national reputation. A demonstration of actual technic of application of the various physical modalities will be given. There will be a complete exhibit of the latest electrotherapeutic apparatus and accessories. All legally licensed physicians are welcome and detailed program can be obtained by addressing Dr. Richard Kovacs, Secretary, 223 East 68th Street, New York City.

SOCIETY NOTES

Forty-five doctors attended the recent meeting of the Republican Valley Medical Association held at Franklin and had it not been for the heavy rain there would doubtless have been one hundred here. A very interesting program was given and a banquet was held at the Lincoln hotel in the evening. The program was as follows:

"Jaundice," Dr. Egan, Hastings.

"The Congenital Kidney", by Dr. C. E. Mullinax, Hastings.

"The Kidney of Pregnancy", by Dr. J. N. Campbell, Stamford.

"Diabetes Mellitis," by Dr. P. A. Sundbury, Holdrege.

"The Expert Medical Witness", by Dr. Wm. F. Dugan, Campbell.

"The Discussion of Dr. Willis' Paper", by Dr. C. G. McMahan, Superior.

"The Discussion of Dr. Campbell's Paper", by Dr. A. F. Reeves, Farnam.

"The Discussion of Dr. C. E. Mullinax's Paper", by Dr. R. H. Kerr, Alma.

A general Discussion of Diseases of the Kidney, by the members present.

The **Cedar, Dakota, Dixon, Thurston and Wayne Counties Medical Society**, held a Heart Clinic in Laurel, Nebr.,on June 17, with fifty members and visitors present.

Members of the Society brought in the patients, and after giving their history, Dr. Wm. N. Anderson of Omaha and Dr. W. D. Runyon of Sioux City demonstrated and discussed the particular lesion to the Society — much to the benefit of the patient and the members of the Society as well.

In a business meeting following the Clinic, Dr. J. D. Lutton of Laurel and Dr. P. B. Lonergan of Bloomfield were admitted to membership of the Society.

At the suggestion of the Publicity Committee of the State Society, a Publicity Committee from our own Society was appointed, with Dr. Lucien Stark as Chairman.

C. L. Phillips, Secretary.

The **Buffalo County Medical Society** held a regular monthly meeting at the Kearney Chamber of Commerce rooms on Thursday evening at eight o'clock. The meeting was well attended by doctors from over the county, Ravenna, Shelton and Gibbon, all being represented. A large number of Kearney physicians were also present. A number of interesting papers were read: Dr. A. D. Cameron on "Care of the Puerperium and Care of the New Born Infant"; Dr. G. H. Hall, on "Medical Diathermy." Both papers were freely discussed by the members present. Dr. Basten gave an interesting review of cases in which complications had developed for which he was in no way responsible. A report of the state medical meeting at Lincoln held May 12, 13 and 14, was given by Dr. Lucas, of Shelton.

Dr. Sorenson, of Ravenna, reported having attended an accident case on the Lincoln highway, as he came in to the meeting. The driver of a tourist car, in attempting to pass Dr. Sorensen's car, struck the loose gravel at the side of the highway, and the car was upset. Fortunately no one was injured seriously.

The next meeting of the organization will be held on June 25.

The **Twelfth Councilor District** held its last meeting at Sidney on June 8, 1925. An interesting meeting was reported with a good attendance present.

Dr. C. P. Fordyce, Councilor of the Third District, and Dr. H. E. Potter, Councilor of the Seventh District, are contemplating a joint meeting of their districts to be held in Beatrice about September 10, 1925. Both Dry Clinics and papers will be on the program, with a luncheon at the Paddock Hotel and dinner at the Beatrice Country Club.

HUMAN INTEREST TALES

Dr. O. P. Ludwig has moved from Omaha to locate in Casper, Wyo.

Dr. A. F. Johnson has recently moved from Osceola to Wausa, Nebr.

Dr. E. A. Beard and son of Morrill are spending their vacation in California.

Dr. B. M. Kully of Omaha sailed recently for Vienna, where he will study.

Dr. C. P. Fordyce of Falls City attended the Rotary International Convention at Cleveland recently.

Dr. and Mrs. Waldron Alvin Cassidy recently announced the birth of Gloria Lynn Cassidy, June 16, 1925.

Dr. A. R. Hornbeck of Murdock has sold his practice and will move to some other locality. He has not yet decided where.

The Platte Valley Hospital of North Platte recently moved into new and more spacious quarters. Dr. E. W. Fetter is in charge.

Dr. J. P. Lord of Omaha was elected vice president of the American Orthopedic Association at the last meeting of this organization.

Dr. Herbert Cooper and wife of Craig are moving to California. They were recently given a farewell picnic by the Burt County Society.

Dr. J. P. Lord of Omaha read a paper before the annual meeting of the Montana State Medical Association at Lewiston, Mont., during July.

Dr. R. O. Griess of Harvard has moved to Hastings to take up Eye, Ear, Nose and Throat as a specialty, when he will be associated with Dr. A. J. Boren.

Dr. Rachel Long of Holdrege attended the national meetings of the Women's National Medical Association and the American Medical Association at Atlantic City in May.

Our editor, Dr. F. A. Long, will return from his vacation in Europe during the early part of August, and will again take charge of the Journal in time to do the work for the September number.

Dr. I. S. Cutter, retiring Dean of the University of Nebraska Medical College, entertained the Board of Directors of the Omaha Chamber of Commerce and the greater Omaha committee at lunch before he left for his new duties.

Dr. B. J. Loyd, assistant surgeon general of the U. S. public health service, has offered to submit himself and nine other persons to inoculation with active germs of virulent smallpox to prove that immunity is caused by vaccination.

NECROLOGICAL

Uriel H. Squires, Hebron, Nebr.; Cleveland University of Medicine and Surgery, Cleveland, 1882; member of the Nebraska State Medical Association, president of the Thayer County Medical Society; for 25 years a practitioner at Hebron; aged 71; died, June 20, 1925, of carcinoma of the bowels.

NOTED CHEMISTS WILL GIVE AID TO HOOVER

The appointment of an advisory committee composed of outstanding members of the chemical industry to cooperate with the Department of Commerce has been announced by Secretary Hoover.

The purpose of this committee is to assist the chemical division of the department in mapping out a program of work which will be of the most practical and immediate benefit to the industry.

The membership of the committee, as announced by Secretary Hoover, includes Dr. Leo Bakeland, president American Chemical Society and inventor of bakelight; Dr. A. S. Burdick, president of the Abbott Laboratories of Chicago, and formerly president of the American Drug Manufacturers' Association; Dr. H. E. Howe, editor of the Journal of Industrial and Engineering Chemistry; Dr. Charles H. Herty, president of the Synthetic Organic Chemical Manufacturers' Association; Henry Howard, chairman of the board of governors of the Manufacturing Chemists' Association; G. Ober, president of B. Ober & Sons, Baltimore, and past president of the National Fertilizer Association; E. G. Trigg, president of John Lucas & Co., Philadelphia, and president of the Agricultural Insecticide and Fungicide Association; A. Cressy Morrison, president of the Acetylene Gas Manufacturers' Association, and S. W. Wilder, secretary of the Manufacturing Chemists' Association.

CHOLECYSTOGRAPHY

Glover H. Copher, St. Louis (Journal A. M. A., May 23, 1925), summarizes his paper as follows: Bromin and iodin are excreted in the bile after the intravenous injection of sodium tetrabromphenolphthalein or tetraiodophenolphthalein. During a fasting period, the bromin or iodin enters the gallbladder through the cystic duct and is sufficiently concentrated there to make the gallbladder opaque to the roentgen ray for a period of from thirty to thirty-five hours. The concentration of the bromin or iodin is normally dependent on the retention of the bile in the gallbladder by the sphincter of the common duct. The maximum concentration of the bromin or iodin is reached in from sixteen to twentyfour hours after injection. The average concentration of bromin in the gallbladder when it casts a shadow of maximum density is 0.6 per cent. The average bromin content of bile that has not entered the gallbladder is 0.2 per cent. The greater portion of the bromin in the gallbladder which produces a shadow of that organ after intravenous injection of tetrabromphenolphthalein leaves the gallbladder through the cystic duct. It is concluded that the gallbladder has a concentrating activity.

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, September, 1925 No. 9

CONTENTS

Page

The Treatment of Fractures: A Symposium, Drs. A. F. Jonas, J. W. Duncan, C. H. Waters, Robert D. Schrock, W. L. Sucha, J. A. Weinberg, J. Jay Keegan, and A. F. Tyler, all of Omaha 325

Modern Aspects of Nutrition—The Pathology of Malnutrition. 7. Food with Reference to the Acid-Base Equilibrium, Victor E. Levine, M. A., Ph. D. 336

B. Sc., M. D. 342

Acute Appendicitis in Children, A. W. Anderson, M. D. 347

Pyuria, F. B. Young, M. D. 349

Congenital Hypertrophic Stenosis of the Pylorus, J. A. Henske, M. D. 353

Traumatic Laceration of Lung Without Injury to the Parietal Pleura: Report of a Case, Earl A. Connolly, M. D. 356

The President-Elect 357

Blood Pressure Changes Accompanying Coronary Occlusion 357

Page

Removal of Foreign Bodies from the External Ear 357

EDITORIALS—

The Office of the Journal and Secretary Moves 358

A Glimpse of British Medicine 358

Solving the Cancer Problem 358

Some Erroneous Notions 359

Interstate Clinic Tour 359

Group Practice 359

Some Problems in Diagnosis, A. L. Cooper, Medical Society of the Missouri Valley at St. Joseph 361

University of Pennsylvania Graduate School of Medicine 361

Editorial Paragraphs 361

A Landlubber's Log on the "S. S. Montroyal" and His Musings 362

Inter-State Post Graduate Assembly of America 363

Human Interest Tales 363

Necrology 364

Books Received 364

THE TREATMENT OF FRACTURES: A SYMPOSIUM*

By Drs. A. F. Jonas, J. W. Duncan, C. H. Waters, Robert D. Schrock, W. L. Sucha, J. A. Weinberg, J. Jay Keegan and A. F. Tyler, all of Omaha.

INDICATIONS FOR OPEN OPERATIONS IN FRACTURES OF THE FEMUR

A. F. Jonas, M. D.

An attempt must be made in all cases of fracture to reduce it by hand, by manipulation. The reduction must be complete because at the present date the patient, who was once satisfied with a good functional result, now demands a "cabinet makers fit". The Roentgenogram makes this imperative.

When we confine our attention to fractures of the femur, we have to deal with: (1) Fracture of the femoral head, simple or multiple. (2) Separation of the epiphysis. (3) Fracture of the neck of the femur intra or extra capsular impacted or not. (4) Fractures through the trochanteric region. (5) Fractures immediately below the trochanteric region. (6) Fractures through the shaft; (a) transverse; (b) obliquem; (c) spiral. (7) Supra condyloid. (8) Epiphysial separation or fracture of the trochanter major usually required an open operation.

Fractures through the neck when impacted are not disturbed, but should be immobilized.

Fractures not impacted confined to the neck should be placed in extreme abduction and fixed with Plaster of Paris according to Whitman. An open operation is very rarely necessary.

Fractures through any portion of the shaft can usually be adjusted if seen shortly after the accident. Here we usually have a flexion and abduction of the upper fragment, over this we have no control, it becomes necessary that the lower fragment over which we have control by lifting it up and bringing it in alignment with the upper fragment by a swinging apparatus which embodies the principles of the Hodgkin splint. I prefer the original Hodgkin appliance. To my mind when this splint has been modified or improved it has lost its efficiency. When the fracture is in the lower end, we find that the gastrocnemius muscle has pulled the fractured end backward, we then resort to the principal of the Steinman pin extension.

---

*Given before the Omaha-Douglas County Medical Society, February 24, 1925.

The indications for open operation are:

1. An inability to accurately adjust the broken fragments by hand or by apparatus, when a reduction seemingly has been made it should be verified by a skiagram. A fracture in the neck which cannot be held in place by the Whitman fixation or Hodgkin extension. A nail or a pin driven into the neck or a Lane plate may be required. If a fracture of the shaft cannot be brought into alignment, a bone plate or graft or a Lane plate may be advisable. The Parkham metal bands have been very servicable.

2. Mal-union angulation or overlapping, is always an indication for operation. Mal-union occurs where for one reason or another there has been no adjustment, due to unfamiliarity of the landmarks which guide to a diagnosis before and after the "setting" or an absence of an x-ray. The mal-union must be broken up with chisel or saw, and an internal appliance used, one with which the surgeon is most familiar.

3. Ununited fracture. It is self evident that such a condition requires an open operation, a vivication of the broken ends, and adjusted preferably by means of an auto-graft.

4. Delayed union may be overcome by drilling into the site of fracture according to Brainard or by a bone inlay.

5. In those very rare cases where an osteo-myelitis may arise an open incision may be indicated.

FRACTURE OF THE TIBIA

J. W. Duncan, M. D.

Because 10% of all fractures involve the tibia, because this bone bears more weight than any other bone in the body, and because malposition and malalignment gives serious disability, fractures of the shaft of the tibia are of great importance.

Most often the bone is fractured by direct violence. With the foot bearing the weight of the body, the knee straight, a lateral blow of minor degree will often fracture the bone. I have seen several cases in elderly people, in which the mildest kind of an indirect violence, resulted in a fracture. The fracture is generally spiral, at about the junction of the lower and middle one-third. The fibula is commonly fractured at the same time and at a slightly higher level. Fractures near the knee are most often transverse.

In the few cases in which the fibula is not fractured, there is little or no displacement of the tibial fragments. Displacement is the rule if both bones are broken. I have no doubt that displacement often occurs, not at the time of the fracture, but when the patient puts weight on the limb in an effort to walk. The powerful quadriceps extensor muscle pulls the lower end of the upper fragment forward. The equally strong gastrocnemius pulls the upper end of the lower fragment backward and upward. The fragments glide past one another. With the patient on the back the weight of the foot rotates the lower fragment outward.

Since the tibia lies closely beneath the skin anteriorly, fractures of this bone are often compounded, the lower end of the upper fragment being driven through the skin area. Compounding is especially apt to occur if the injured person attempts to walk on the broken bone, as not uncommonly happens.

The tibia, bearing the weight of the body, lies between two hinge-joints, the knee and the ankle, which have little, if any, lateral movement. With these facts in mind, the necessity for careful alignment of the fragments is evident. Inward bowing or external rotation of the lower fragment will evert or pronate the foot, throwing the weight on its inner border, giving either painful or flat-foot. Good position of fragments is not so important as good alignment, though in fractures of the lower one-third of the bone, both are very important.

Fractures with little or no displacement or swelling may be placed immediately in a circular plaster cast. At least the first cast must go to the mid-thigh. This is very necessary. Movement of the knee is not to be permitted, for, if it is, displacement of fragments may take place even in a snugly fitting and well applied cast. After amalgamation of the fractured ends has begun, I apply the cast to the knee only.

Fractures in a good position with much swelling and soft tissue injury, though not compounded, I splint and do not disturb except to tighten the dressing with a new roller bandage as the swelling recedes. They are, of course, placed in a cast at the earliest safe time. Transverse fractures in bad position and alignment can sometimes be reduced by manipulation and locked under anesthesia. This is not so difficult if the fibula is unbroken or only cracked. It can then be used as a fulcrum for leverage. Once position and alignment are secured, there is little danger of losing them.

Oblique fractures with the usual displacement are difficult to secure or maintain in proper reduction. Traction on the foot with the knee and hip in flexion, and the patient under anesthesia secures satisfactory reduction sometimes. But before a fixative dressing can be applied, in nearly every case, it will be found displacement of the fragments has recurred. Traction on a Thomas splint, straight or bent, has not been satisfactory in my hands. One stretches the hip and knee joint capsules, but does not relieve the overriding. I have tried traction between a plaster paris knee cuff and a plaster shoe. Sometimes the apparatus followed closely that recommended by others, sometimes it was original—none was satisfactory. If one pads the pressure points sufficiently to make them bearable, slipping of the plaster paris cannot be guarded against.

I have not used metal pins, nor calcaneal traction in tibial fractures. I have come to recommend open operation and reduction in all tibial fractures that cannot be immediately brought into satisfactory position by manipulation under anesthesia.

I use beef bone screws if the fracture is sufficiently oblique. In other cases beef bone, plates and screws are employed. They are easily and quickly applied. They usually do not require removal. Wiring or banding the fragments is often satisfactory. The usual rules apply if the fracture is compounded.

In case of delayed union or non-union, I fit the patient with walking caliper. If no union then takes place, bone grafting is advised.

The deformity most to be guarded against is inward bowing or external rotation of the lower fragments. The foot pain and leg ache that usually result from this deformity can sometimes be relieved by proper alteration of the shoe.

Finally it is appreciated that a good functional result is often obtained with what appears to be poor anatomical reduction. But the prudent doctor is almost obliged to demand geometric accuracy of reduction in this day of convenient x-rays, ubiquitous attorneys and litigious patients.

FRACTURE OF THE PATELLA

C. H. Waters, M. D.

Fracture of the patella, though constituting less than 2% of all fractures, is nevertheless, an important injury for not infrequently it is followed by disability and a proneness to so-called re-fracture.

The mechanism of fracture determines its type and they are accordingly placed in three classes, the last representing a combination of the first two.

1. Indirect, or fracture by muscle action essentially, resulting in approximately transverse separation of the bone.

2. Fracture by direct violence which is characterized by more or less comminution with little or no separation of the fragments and hence no loss in the integrity of the tendon.

3. Fracture by direct violence plus separation as the result of tearing of the tendinous investment by muscular action. It is probable that this latter type of injury is of more frequent occurrence than was formerly supposed.

Certain peculiarities of the patella should be taken into account in order to interpret, in part at least, the pathology resulting from trauma and its slight response toward true osseous union. In the first place the patella is intercalated in the quadriceps tendon, and is thus classed as a sesamoid bone though structurally it differs from such. Furthermore, it participates in the formation of the knee joint, the larger part of its posterior surface being cartilage covered. Its sole function is to serve as a "pulley" for the tendon, but its very presence, like the weakest link in the chain, materially lessens the tensile strength of the tendon of an extremely powerful group of muscles. Many fibers of this tendon terminate in their attachment to the bone while others pass over its anterior surface or laterally and are continuous with the patellar ligament. Still others spread out laterally over the joint capsule with which they fuse intimately. It will be noted that the bone lacks a true periosteum and an intrinsic blood supply, but is dependent for its nutrition on the arterial rete of the joint capsule and that of the tendon. Fibrous tissues in general have a low vascular requirement, and as the patella occupies an almost parasitic relationship to the surrounding tissues, it will suffer most by reason of trauma with its immediate vascular impairment and that due to subsequent cicatrization.

It is inevitable, in most instances, that fracture of the patella occurs first, and that the tendon fibers will first stretch appreciably before tearing. When torn the ends will be irregular, tending to curl in leaving a frayed curtain over the fractured surfaces of the bone. With continued action of the quadriceps the tear extends laterally involving the joint capsule to a varying degree. More or less loss of extension dependant on the extent of lateral tearing is the immediate result of fracture, accompanied with prompt swelling of the joint due in part to hemorrhage but more to the tremendous exudative response of traumatized synovia and periarticular tissues.

The typical disability and easy demonstration of the separation of the patellar fragments renders the diagnosis of fractures of the indirect type simple enough, while in the direct type, with comminution and without separation, the x-ray may have to be used to demonstrate the nature of the injury.

It is with the treatment that the greatest interest in patellar fractures lies. It will be generally conceded that the comminuted type without separation requires, as a rule, but conservative management and may thus be disposed of without further discussion. The management, however, of the more frequent type of fracture with separation is the subject of considerable difference of opinion. If the separation of the fragments is but slight, indicating but moderate tearing of the lateral tendinous expansion, and if the fractured surfaces can be approximated with definite crepitation indicative of the absence of any considerable interposition of the curling fringe of torn tendon, I see no objection to conservative treatment. Essentially in such procedure, immobilization of the leg in complete extension in a gutter splint with moderate flexion at the hip to lessen spasm of the quadriceps, is the primary consideration. As soon as the swelling of the joint has subsided some mediate co-aption contrivance should be applied so as to immobilize the fragments and to hold them in as close contact as is possible. For this purpose appropriately applied adhesive strips, or especially devised pads may be used. For more positive control light steel rods may be passed transversely through the tendon above and below its patellar attachments of each fragment and the two drawn together and held by adhesive strips. Aseptic precautions are imperative. The result should be checked by x-ray examination and undue separation or tilting should be corrected by further adjustment of the co-aptation apparatus.

While in this method osseous union is rarely if ever obtained, it is not a matter of great importance providing the lateral tearing has not been so extensive as to discourage firm union. In the more extensive tears the scar forms a relatively weak bond favoring subsequent stretching with a corresponding loss of extension, and with a predisposition to rupture on slight provocation.

The operative, or open treatment of patellar fractures, at the present time, has as its essential feature the accurate approximation of the torn lateral expansion of the tendon with absorbable suture material. It is now recognized that wiring of the patellar is unnecessary and actually objectionable. The open method further makes possible the accurate contact of the fractured surfaces in removing the frequently interposed frayed ends of the torn tendon, and thus promising greater likelihood of osseous union. Another, though minor advantage, is that open operation makes possible the removal of blood in the joint cavity, which if excessive, fails to be completely absorbed and may give rise to adhesions through subsequent organization.

The only objection to arthrotomy is the peculiar vulnerability of joints to infection, the occurrence of which is often a disastrous sequel. To-day, with rigid aseptic technic, this risk is minimal but I cannot emphasize too strongly that open operation should not be considered unless all the conditions and requirements of asepsis can be absolutely fulfilled.

Formerly the operation was undertaken 7-10 days after the injury to permit the reaction to subside and also with the idea (which I now consider erroneous) that then the tissues would be more resistant or less susceptible to infection. At the present time this delay is being regarded as an unwarranted loss of time and further adds to the difficulty of thorough removal of blood and fibrin undergoing organization. It is my own practice to operate at once, preferably within several hours following the injury. Thus far I have not had occasion to regret this seemingly precipitate procedure. Where laceration, or even abrasions, about the joint complicate the fracture, it will be wise to delay operation until such wounds have healed.

A variety of incisions are in use, a straight or slightly curved vertical, transverse or "U" shaped. As I see it, there is no special choice among these providing adequate exposure is obtained, that the vascular supply of the skin is not jeopardized and the incision so placed that the resultant scar is not directly superimposed upon the patella.

The skin and subcutaneous tissues should be dissected as a single flap from the tendon, patella and capsule, sufficient to give good exposure to the lateral extent of the capsular tear. The joint is then thoroughly flushed with normal salt solution, removing blood and fibrin. The frayed ends of tendon and capsule are trimmed and removed from the fractured surfaces of the bone. Usually a single mattress suture of chromic catgut or preferably, kangaroo-tendon, is placed on each side of the patella. A circumferential suture of the same material may be placed around the patella to insure firmer approximation of the fragments if it is deemed advisable. A few interrupted sutures are then placed appropriately to give more accurate co-aption of the suture line of the capsule and of the tendon over the anterior surface of the patella. The skin flap is replaced after thorough hemostasis and the wound closed, preferably with interrupted sutures.

After firmly applying dressing and bandage to the knee, the joint is immobilized in a circular cast. My practice is to allow these cases to walk with aid of a crutch or cane on the second day and thereafter. If there is no local justification for examination of the incision the dressing is not disturbed until the seventh or tenth day, at which time the sutures are removed and the opportunity taken to manipulate the patella with the idea of lessening the tendency of adhesions. At the end of three weeks the cast is converted into a removable gutter splint to be worn when walking and permitting frequent opportunities for active and passive motion in the joint. After the sixth week the cast is discarded and the individual is cautioned against violent use of the leg which is safeguarded by the continued use of a cane for at least another month.

At the end of three months practically complete flexion has been regained. There is a minimum hypertrophy of the patella as contrasted with cases in which non-absorbable material had been used in the direct approximation of the patellar fragments, due, of course, to the lessened irritational response in the bone.

The patient thus is actually confined but a short time and in many instances, participation in his occupation may not be greatly restricted. Refracture, or rupture of the fibrous bond, may occur at any time after dispensing with fixation, but usually during the first four months and, invariably, is the result of unusual violence and never of normal active use. The only instance of refracture that I have had to do with was in a blind man who fell down stairs during the fourth month after the initial fracture. The findings in the case at the second operation give me a basis for my previous remarks regarding the slight tendency toward osseous union in the patella. In this instance both fragments had the consistency of fairly hard putty and, too, a similar hemogeneous appearance. Such marked atrophy or decalcification must be the result of nutritional inadequacy and would probably account for many instances of fibrous union and thus emphasize the importance of firm tendinous and capsular repair which if obtained will give a perfect functional result despite faulty union in the patella itself.

In summarizing, I wish to emphasize the following points:

(1) In fracture of the patella the gravity of the injury rests with tearing of the tendinous expansion of the quadriceps tendon. The actual fracturing of the bone is to be regarded as unimportant except that the degree of separation of the fragments is a measure of the extent of lateral tear.

(2) Osseous union of patella fragments rarely occurs, nor is such union necessary.

(3) The treatment should be directed toward firm union of the torn tendinous expansion. When this tear is but slight, conservation measures promise a satisfactory result with reasonable certainty.

(4) In the more extensive tears with wide separation, accurate coaptation is imperative for complete restoration of function and this can be attained solely by open operation.

REFERENCES

Hertzer—Surg. Gyn. & Obs. 32. T. 273. Mar. 1921.
Mowell—Internal Clin. 2. 171. 1921.
Parham—Surg. Clin. N. A. 3. 1307. Oct. 1922.
Ochsner—Surg. Clin. Chicago. 3. 253. Apr. 1919.
McKenna—Surg. Clin. N. A. 3. 1603. 1923.
Whitelocke—Proc. Royal Soc. Med. London. 1922-1923.
Mocerven—Am. Surg. 5. 77. 1887.
Stunson—"Practical Treatment of Fractures". Phil. 1907.

FRACTURES AT THE ELBOW

Robert D. Schrock, M. D.

(This subject was presented with a series of 40 lantern slides, showing early and late results in: (1) Minor fractures; (2) dislocations with minor fractures; (3) major fractures without displacement of fragments; (4) major fractures with marked displacement of fragments.)

The conditions under which any work is done determine to a great extent the success or failure of well directed effort. Automobile mechanics have educated the public to take a machine with a broken axle to the repair shop. The auto-ambulance is called without protest.

In the cities, fracture work can best be done in the hospitals where working facilities are readily available. In the country the doctor must depend, in the emergency, more on his mechanical ingenuity for the primary reduction and fixation of fractures. The quick transportation of the present day makes easily accessible the x-rays as a means of proving or disproving the desired result.

Practically all fractures can and should be demonstrated by proper clinical examination. The details of the fracture can be best demonstrated by the skiagram, and the pictures must be made in two planes. It is by the recognition of the details of a fracture that the best reduction can be made and thereby obtain the best chance for return to normal function.

The x-ray in its present stage of development has given to the doctor the means by which the diagnosis of fractures can be made an exact science. In the larger communities, exact and correct diagnosis of fractures about an elbow can and should be made within a few hours. X-rays should be made as early as possible, and demonstrated accurately to the patient or family. The public has learned the value of this type of diagnosis. Such procedures tend to increase confidence and a better understanding of the problems presented.

Fluoroscopic examinations for fractures are inadequate. Many times minor fractures or fractures without displacement cannot be demonstrated except by a good skiagram. Nor does the fluoroscopic leave a tangible record for later reference if that be necessary. The fluoroscope is a necessary adjunct for observation of the fracture in the process of reduction. A skiagram after reduction and fixation is essential both to the patient and to the doctor. In addition, from a medico-legal aspect the markings need be unmistakable.

The type and location of the fracture determines the method of treatment, i. e., the mechanism of reduction, the position of fixation and the period of immobilization.

As a general rule, in fractures more than one-half hour old, enough muscle spasm is present to make improbable a good reduction without the use of a general anaesthetic. Muscle relaxation is essential to a good reduction. With the present day facilities in the larger communities, a good reduction should mean practically anatomic apposition and alignment. To be content with less is to run a grave danger of marked deformity with considerable loss of function.

Each compound fracture is a law unto itself. Simple fractures may require open operation with internal fixation. The type of fixation is determined by the mechanics in the fracture and the adaptability of the operator. The simpler the method, the better it is for the patient. Internal fixation does not remove the necessity for proper external splinting. Conscientious effort at reduction by manipulation will many times obviate the more spectacular open operation — with all of its attendant dangers.

In fractures at the elbow, not including the olecranon, the best position of fixation is in acute flexion, the forearm in complete supination and some abduction. The abduction of the forearm at the elbow should be sufficient to bring the little finger into line with the head of the humerus when the arm is approximated to the chest wall. This gives the better chance for retaining the normal carrying angle at the elbow. Supination of the forearm prevents much delay in the recovery of the rotary movements of the forearm after fixation has been removed. The degree of flexion is determined by the position of greatest stability of the fragments and the amount of swelling in the anticubital space. Not only the radial pulse should be clearly palpable but also there should not be obstruction to venous return. Swelling of the hand and cyanosis should be regarded as grave danger signals. Maceration in the anticubital space is readily avoided by the introduction of a thin layer of sheet wadding or a fold of bandage with care to prevent wrinkling or constriction. This with a little talcum adds to the comfort of the patient.

The method of fixation offers much ground for discussion. Text books offer many pictures of numerous splints beautifully applied. Editors would do splendid medical missionary service by destroying some of those plates. Any splint poorly applied is a source of danger, either from local compression or failure to maintain position. The so-called universal metallic splints rarely can be exactly adapted to the case at hand and should be used merely as a temporary or transportation splint. Adhesive strips if well placed, do not produce constriction nor do they provide the desired lateral stability. They do add a source of further irritation and undue discomfort on removal. In children this is especially undesired.

Posterior splints are far preferable to those anterior. Where right angle fixation is used, anterior splints are used as well. Each case demands an individual splint. Molded splints are quickly and easily made from plaster of Paris bandages. Their width and length can be readily controlled by the operator. Padding is quickly applied to their surface in the form of sheet wadding, cotton or flannel bandages and in their application minor changes of position can be made while the plaster is setting. To my mind, the molded plaster splint is the one of choice owing to its portability, adaptibility, simplicity of application and comfort to the patient. The splint is extended from the mid-dorsum of the hand well up to the back of the shoulder; it is applied by a roller bandage, preferably of canton flannel, snugly and avoiding reverses. After firm compression is applied throughout, the dressing is finished by a figure of 8 across the angle from the wrist to the upper one-third of the arm. This gives added stability.

The period of immobilization is short. In most fractures at the elbow, a little active motion, i. e., 5 to 10 degrees can profitably be started in seven to ten days. The splints are re-applied and more motion is permitted daily. The amount of motion should be determined by the patient and no painful motion permitted. Protection is essential for a minimum of four to five weeks. Vigorous use of the elbow is not desirable for another four to five weeks and in this stage forcible passive motion is to be deplored. Much voluntary muscle spasm is produced at this time by over enthusiastic treatment. The extremes of motion will come more readily if they are not forced.

"What not to do" is important. "Breaking up adhesions under anesthesia" in the 3 to 4 months period produces too much traumatic arthritis and too little improvement in range of motion. In children such procedures are contra-indicated. In adults such procedures are to be undertaken rarely and then with the greatest concern and caution.

DISCUSSION

Dr. W. L. Sucha: I am very grateful to Dr. Schrock for his presentation of this beautiful array of cases, and there is very little to add except perhaps to reiterate, and as his slides show, it is probably always indicated to reiterate and say over and over again the things that should be said about elbows. These are not the most difficult cases to handle, as Dr. Schrock has shown, and yet the percentage of disabilities is very high.

There are a few little things which I know Dr. Schrock did not have time to mention.

There wouldn't be a lot of bad functional results in these elbows—(this last case demonstrates this beautifully. The man has a rotten anatomical result, yet it functions beautifully), if a few salient points are remembered.

First the carrying angle should be remembered. This man's carrying angle is gone. Second, remember which are and which are not intracapsular. That is easy to remember because we have very little capsular space on the front of the elbow, and a considerable amount on the back part on the humerus behind, naturally, to allow for the migratory action of the elecronon and to allow for stretching when doubled up. The third thing to remember is splints. The doctor carefully emphasizes the fact that we didn't use any anterior splints. They are dangerous, absolutely dangerous in all these fractures because the only way to get a good position is in extreme flexion. When you get extreme flexion they become dangerous.

A fourth little point, I think it well to remember is about reducing. When we can't get complete flexion we know we haven't got a good reduction. If the radial pulse is interfered with after you get complete flexion you know the reduction is not good.

These are two points to remember. Remember you can't have good reduction if you can't get complete flexion, and if you haven't got the radial pulse you haven't got good reduction. That is before you get the swelling. Now you might get the radial pulse and not have good reduction but if you can't get it you know you haven't got good reduction.

The x-ray should always be used in so-called sprains and dislocations of the elbow, particularily in children.

A dislocation of the ulna backward is very apt to cause a fracture of the condyle, or the coronoid process.

Dr. Schrock emphasizes the insults to the elbow, as he calls them, insults to the elbow by manipulation. These cases all call for manipulations, but the manipulations should be governed by the patient's pain and not abused, because in this particular location the muscles or tendons so readily ossify from repeated trauma, or so-called joint mice form.

I like a posterior moulded splint of plaster of paris a little better than the simple Ashurst bandage or Lund swave because it controls it this way (laterally). If you have a muscular person you can box it in but it doesn't require a lot of splint, except for comfort and preventing cutting by the bandage. The Ashurst bandage, of course, calls for wrapping around the arm. I don't like that. I don't like anything circling around the arm. Another thing, don't ever stick a lot of wedging in excepting to lever that distal humeral fragment forward because if you get the condyles forward with manipulation the broad tendon of the triceps will hold them there. Make reduction by first increasing deformity the same as in a Colles and the broad tricepts tendon is going to hold it after it is reduced. It is extremely dangerous to try to hold this fragment forward using the forearm for a lever and a pad for a fulcrum. One or two thicknesses of gauze to prevent maceration is fine.

Now, as to compound fractures, as the Doctor has said there is only one way to treat them. In every compound fracture you should hospitalize your patient or put him to bed, immobilize the patient. You can get extension in two ways, either this way (indicating) or that way (indicating) and get by in pretty good shape even with a compound fracture. Many of the compound fractures you can sterilize and close up making simple ones out of them, many will not drain but if they do you can use extensions two ways and keep them in alignment pretty well.

An open operation should be done just as soon as you realize you are not going to get apposition. If after two or three manipulations, you get the arm into flexion, the fragments haven't gone into position then is the time for open operation. Why so emphatic about flexion? The arm will keep gradually going down from its own weight. It gradually comes down, it never comes up. You have to fight for every inch of the way it comes up but it will generally go down. If you manipulate it early before swelling the percentage of disabilities is small, and as Doctor Schrock has demonstrated, even in old cases. If they were seen early and handled properly early, that would cut that percentage down still more, so after all there wouldn't be a lot require open reduction. Of course, if the condyle is completely broken off and there is much swelling you can't manipulate it back. Those cases call for opening.

The most dangerous thing I think, is the anterior splint. It is terrible to see a child, for instance with all of the flexor muscles of the hands sloughed out, gone. The best we can ever do for them is to give them a fair hand, a transplant of the flexor carpi ulnaris or radialis into the flexor profundus will give them a hand they can shut ensemble, only half a hand at the best. It isn't usually difficult to give a good elbow even after such mistreatment.

So in this flexor position there is only one thing to watch, that is the radial pulse and swelling of the fingers. Watch your radial pulse. If that stays good and the fingers do not swell, you have nothign to worry about and if your x-ray shows a good position, a good alignment, when you get it up in this position you will always get a good, usable hand, and if you are always careful in getting the position up, bringing it up so the forearm is in good line with the upper arm you will have a good carrying angle when you get through. That is the only way you can be sure of a good carrying angle The condyles are beveled 80° and the ulna 80°, making 160° and just keeping one of the two straight will not give a good carrying angle, you have to have them in line with each other, there is no other way you can keep them there except in complete flexion.

CARPAL SCAPHOID FRACTURES

J. A. Weinberg, M. D.

Carpal navicular fractures are of importance because of the frequency with which they go undiagnosed. In discussing them it is necessary to distinguish between recent fractures, those diagnosed within a period of a few weeks of the accident, and late fractures, those diagnosed after months of painful disability.

It is important to discover the injury early as it is only in the early cases that complete restoration of function may be obtained. Usually a history will be obtained of the patient having fallen on the outstretched hand, the position which often produces a Colles' fracture. If the anatomy of the wrist is reviewed it will be seen that with the hand in radial extension the capitate bone acts as a wedge against the body of the navicular which is held fixed against the radius. With the impact of falling on the hand the wedge splits the navicular bone.

The symptoms occurring soon after fracture are typical. (1) There is extreme pain on the radial side of the wrist, the pain gradually subsiding after a day or two. (2) swelling occurs a few hours after the injury. This swelling is usually localized on the dorsal radial aspect of the wrist so that the anatomical snuff-box is obliterated. (3) Limitation of flexion and extension at the wrist is invariably present. (4) There is marked tenderness with palpation over the navicular bone. (5) X-ray examination will reveal a fracture. A picture of the uninjured side should be taken for comparison. The mistake is frequently made of confusing the injury with "sprain" or Colles' fracture. Not infrequently the injury occurs together with the latter.

Complete restoration of function cannot be obtained unless the fracture is treated in the early stage. But even with early immobilization as ordinarily applied there is frequently a marked permanent disability. While talking over with Dr. C. W. M. Poynter the difficulties encountered in this fracture he reminded me that the abductor pollicis muscle is attached to the tuberosity of the navicular and inserts into the base of the first phalanx of the thumb. Therefore, with movement of the thumb the outer fragment of the navicular is pulled away from the inner fragment. In order to obtain complete immobilization of the fragments it is necessary to prevent motion of the thumb. This is probably the most important consideration in the treatment of the fracture. Immobilization of the thumb and wrist should be continued for a period of three weeks.

The chronic type is recognized usually after a period of from a few months to a year or more after the accident. The patient comes for treatment because of pain and inability to use the hand. There is marked limitation of extension of the hand, and limitation of flexion to a less degree. The hand grip is weak. Examination reveals tenderness over the navicular bone. The pain with motion is general through the wrist if the fracture has existed for some time. The anatomical snuff-box is usually obliterated by swelling. Careful x-ray examination will show a faint fracture line with or without displacement of the fragments. Another important x-ray finding is the presence of areas of rarefaction in the wrist bones articulating with the navicular.

The treatment of the chronic case is removal of the navicular which is acting as a foreign body. Removal of one fragment frequently fails to relieve the condition. Complete removal weakens the wrist but allows greater freedom of motion. The pain gradually subsides with the disappearance of the traumatic ostitis and periostitis in the adjacent bones. The end result is not all that might be desired but there is no other treatment which gives relief.

WHEN TO OPERATE AND WHEN NOT TO OPERATE IN FRACTURES OF THE SKULL

J. Jay Keegan, M. D.

There are a few distinctly positive indications for operation in fracture of the skull, a few distinctly negative indications and a larger group in which the advisability of operating is questionable and the policy of watchful waiting is instituted.

The positive indications, briefly, fall into three classes: First, the compound fracture must be cleaned promptly, except in primary shock, and converted into a simple fracture by closure of the scalp; second, the depressed fracture must be elevated, whether focal symptoms are present or not, for such depressed bone quite commonly leads to permanent scar of nervous tissue and Jacksonian epilepsy. Then, it is too late to do much good by operation. The third quite positive indication for operation is the development of the classical symptoms of middle meningeal hemorrhage. These symptoms should be recognized by all. They consist of primary unconsciousness, or simply a transient dazed condition, followed by an interval of consciousness and then gradually returning coma, associated with unilateral paralysis.

The distinctly negative indications for operation in fracture of the skull are primary shock and medullary collapse. Primary shock is recognized chiefly by the low blood pressure, with systolic around 100 and diastolic below 55. An operation in this condition will only add to the shock and certainly result in a fatality. Medullary collapse occurs in the late stages of increased intracranial pressure. It is usually due to an anemia and edema of the medullary centers. It is recognized by the increasing pulse rate to 120 or more, the falling blood pressure, the rapid pauseless respirations of 40 to 50 and the rising temperature to 105 or more. These symptoms are common manifestations in the terminal stages of a great many conditions and represent an irrecoverable loss of regulatory power over heart, respiratory and heat centers. An operation in this stage, no matter how definite the preceding indications, always fails to save the life of the patient.

The large group of debatable cases of head injury are those without focal symptoms but with distinct signs of increased intracranial pressure. First, it is necessary to recognize the general symptoms of increased pressure, before any decision can be made. Several things must be taken into consideration, but a few are of more importance as a guide. Probably most important is observation of the systolic and diastolic blood pressure and the difference between these two, which is called the pulse pressure. The normal relationship between these three figures shows the diastolic pressure two times the pulse pressure and the systolic three times the pulse pressure. A normal example is a pulse presure of 40 with diastolic 80 and systolic 120. In intracranial pressure, the pulse pressure increases either by rise of the systolic or by decrease of the diastolic, until it may exceed the diastolic. This always is an alarming condition as the medullary centers are in danger of collapse. Decision to institute measures for relief should be made before this stage is reached. The characteristic slow pulse usually accompanies the increased pressure changes.

Second in importance is the recognition of increasing intracranial pressure by the mental reaction of the patient. First, in increasing irritability, photophobia, increased reflexes, a desire to be undisturbed, headache, sommolence and increasing stupor to unconsciousness with loss of reflexes. The early stages should be recognized before coma develops. The eye grounds in acute intracranial pressure do not show a distinct choked disc, usually only a blurring of the margins and an engorgement of the vessels, a condition difficult to distinguish from a mild inflammatory process and requiring expert interpretation. The slow respirations may be some guide to pressure, particularly the Cheyne-Stokes type in the late stages of serious medullary involvement.

Assuming then a case of head injury, without an open scalp, depressed bone or focal symptoms, without shock or medullary collapse, but with signs of increasing intracranial pressure, what is the correct or advisable procedure? Three therapeutic measures are available, dehydration by saline catharsis, spinal puncture, or decompression. The choice of these depends in considerable degree on the pathology present. A simple traumatic brain edema without hemorrhage usually does not require an operation for relief. Active magnesium sulphate catharsis, by mouth and per rectum, obtaining two or three watery bowel evacuations daily, usually will relieve the condition sufficiently to avoid alarming symptoms and bring about subsidence within a few days. Hypertonic salt solution, 15% sodium chloride, accurately titrated to a hydrogen ion concentration of 7.4, has been used intravenously with good results.

Spinal puncture in head injuries is a valuable diagnostic and therapeutic procedure, but is not without danger. The intracranial pressure can accurately be measured by the spinal manometer and often is surprisingly high, 30 millimeters of mercury, when the symptoms are only suggestive of intracranial pressure. The presence of blood in the cerebrospinal fluid is significant, first in learning that a laceration of the brain has occurred and second in prognosis of the degree of obstruction to absorption of fluid that will occur. Blood cells and fibrin in the arachnoid villi, through which the cerebrospinal fluid filters into the dural sinuses, plug these filters in variable degree and prolonged obstruction may occur. In such cases where there is a prompt recurrence of intracranial pressure following repeated spinal punctures, subtemporal decompression is indicated.

Subtemporal decompression has been a much abused operation, probably because it is a rather simple procedure and carries with it the reputation of being brain surgery. The removal of an area of bone in the skull and opening the dura is not a procedure that should be done lightly. It should be reserved till it is quite definitely established that a post traumatic unlocalized intracranial pressure cannot be relieved by other measures as saline catharsis, hypertonic salt solution or spinal puncture. It should not be withheld too long where recurrent intracranial pressure exceeds 16 millimeters of mercury, for this much pressure continued over several weeks is liable to lead to permanent changes in the nervous tissue and prolonged symptoms of headache, irritability and mental instability, recognized as definite sequelae of a considerable number of head injuries.

My personal reaction in all these questionable cases is towards conservatism. Subtemporal decompression certainly is to be avoided if unnecessary, and brilliant results from decompression, if other means of relief have not been tried and found of no value, do not prove the necessity or advisability of the operation.

WHAT THE X-RAY INDICATES

A. F. Tyler, M. D.

The x-ray has become so generally used in the examination of fractures and its value has been so greatly emphasized by those preceding me that it seems there is little left for me to say. I would like to emphasize, however, in concrete form some of the important points regarding the value of the x-ray in fractures.

Negative Value:

One of the greatest values of the x-ray in the examination of fractures is its negative value. By this I mean the routine examination of all cases of trauma to the bony system, so that we may be sure that no fracture is present. Due to the negative value of the x-ray, many cases of so-called "sprain" are definitely proven to be so or a fracture is definitely found.

It Visualizes Pathology:

The x-ray examination enables the physician to visualize the pathology which he thinks to be present deduced from the history, symptoms and physical examination; and it is especially valuable in visualizing the type of fracture, that is, whether it is a greenstick fracture, a simple fracture, a comminuted fracture or whether the fracture line extends into the joint surface or whether a dislocation accompanies the fracture.

It Visualizes Position:

It shows when the fracture is impacted, whether it is overriding or whether the angle of the articular surface has been changed. This knowledge is very important and aids greatly in the manipulation necessary in producing proper reduction.

It Visualizes Alignment:

Alignment of fractures, of course, is always important just as proper reduction is always important. In the lower extremities where weight is to be borne, alignment assumes far greater importance than in the upper extremities, because if alignment is poor the ability to bear weight is greatly reduced, resulting in a permanent disability. This is well illustrated in fractures below the knee involving the shaft of the tibia. Poor alignment of fractures of the shaft of the tibia, especially if inward bowing is present, throws the weight onto the inner side of the foot, ultimately resulting in breaking down the arch of the foot and in permanent disability.

It Visualizes Repair:

It is quite important in many cases to determine whether the callus is normal or subnormal for the duration of the particular fracture under observation. Two such cases recently came under my observation and especially emphasized the importance of watching this repair. In both of these cases a fracture of both bones of the forearm had been sustained. The patient had been given early liberty and unfortunately there was another fracture of both bones at the site of previous fracture within a few weeks' time.

In conclusion, it is well to emphasize the fact that although the x-ray findings at times are pathognomonic we should not disregard the importance of history, symptoms and physical findings. In fact, the x-ray findings should be carefully correlated with all the other evidence. By its constant use, however, the physician will become able to visualize the pathology of the fracture in his own mind much better than without its use and will ultimately become much more capable of treating fractures in a proper manner; also, anatomical alignment is an absolute essential in many cases for good function and we should constantly hold the ideal of perfection in anatomical restoration before us. This is especially true nowadays when laymen are so well informed as to the use of the x-ray in fractures.

Doctor: "I will give you a local anesthetic, if you think it necessary."

Railroad man: "Well, doc, if it's going to hurt I reckon you had better cut out the local and run me through on a sleeper."—Kansas City Times .

MODERN ASPECTS OF NUTRITION

THE PATHOLOGY OF MALNUTRITION

7. Food with Reference to the Acid-Base Equilibrium.

Victor E. Levine, M. A., Ph. D.
Professor of Biological Chemistry and Nutrition, College of Medicine,
Creighton University, Omaha, Nebraska.

INTRODUCTION

In the last paper we directed the attention of the reader to the intimately close connection between diet and general vigor. We have emphasized in particular the deteriorating effects of faulty diet on the muscular system. Although we have not touched upon such muscles as the heart or those belonging to the non-striated or involuntary type, the fact remains that these, too, are affected by diet. Very recently we had to stand the loss of a very prominent citizen, William Jennings Bryan, who had suffered from diabetes for a number of years. The disease mentioned is characterized by inability to utilize carbohydrate with physiologic efficiency. Since carbohydrate spares protein and is also indispensable in the utilization of fat, it is readily seen how improper carbohydrate metabolism forms a link in the chain leading to a condition of undernutrition on the part of the diabetic. All the recent discoveries in relation to treatment of diabetes seek ultimately to enhance the nutritional capacity of the individual.

Diabetes, like the conditions directly traceable to malnutrition, has a tendency to weaken the muscular system. As a result of immediate strain at the recent trial in Dayton, Tennessee, and the long continued undernutrition occasioned by diabetes, the heart showed signs of weakening, and it had already begun to dilate. It is frequently seen in the news that some man known to the community had suddenly died, shortly after a heavy and hearty meal. Such meal has a characteristic effect on the circulatory system, inducing a rise in the systolic pressure. Blood vessels with a weakened musculature may not be able to stand the extra strain induced by an increase in the blood pressure. The result — a rupture in one of the vessels and sudden, unexpected death.

SUB-OPTIMAL HEALTH AND UNWISE CHOICE OF FOOD.

We also called attention to the widespread occurrence of disease and the prevalence of sub-optimal health. The suggestion was put forth that the physical condition of our people was to be ascribed to unwise choice of food. Experts in nutrition are agreed upon the fact that the average diet is far from the ideal. It is barely sufficient to support life. The normal physical development and longevity of the human being is inadequately achieved by millions of people of our nation. The United States Mortality Bureau of Statistics has figures to startle even the most prosaic and indifferent person. One-fifth of all the children born, die before the age of one year, one-third die before the age of five, one-half of all persons born die before the age of twenty-three. Approximately 1,600,000 die in this country every year. It is known that forty per cent of that number are easily preventable. Three hundred thousand children die every year, and these deaths are surely preventable.

We should not be satisfied merely with living. Our banner should demand the highest state of biologic function. McCollum emphasizes the plea that in matters of health we should adopt not the average but the optimal as the ideal. The best is none too good for us. It would indeed be surprising to many of us to learn that our bread-meat-cereal-potato diet, which is the average diet, fails to bring out in the rat normal growth, maximum fertility or even proper maintenance. Shall the rat in our various experimental colonies be better fed than our own people?

EXAMPLES OF GOOD HEALTH AND GOOD NUTRITION.

Many will ask why propagandize so much about food? Is it really so important for keeping health or for preventing disease? For answers to these questions let us turn to races and places where civilization has not yet had the opportunity of substituting the natural foods by those industrialized, devitalized, demineralized, devitaminized, colored, dyed or bleached, pasteurized, baked, cooked, roasted, preserved, canned, refrigerated. Take the Arabs for example, with their figs, their dates, their vegetables, their little milk, and their meat on some rare occasions. They live under conditions that do not come up to our ideas of sanitation, yet the fact remains that they are far more immune to disease than Europeans. Dr. Auzimour, a French army physician, writes that diseases of nutrition are almost unknown to them, that ulcers and cancers of the stomach are seldom met with, that appendicitis is very rare, and that gout and kidney gravel are also quite unknown. It is very important to grasp the significance of the fact that when these Arabs desert their dirty villages for the towns and there live the life of the Europeans, eating the foods the Europeans eat, they become as susceptible to disease as the latter. It is evident that resistance to disease cannot be charged to peculiarities of race or climate, but only to the food ingested.

Dr. McCarrison cites another instructive case in the people of India living in the state of Hunza, situated in the extreme northernmost point of that vast country. Dr. McCarrison spent nine years among these people. They live to a great old age and are very fertile. To quote from his writings: "During the period of my association with these people, I never saw a case of dyspepsia, of gastric or duodenal ulcer, of appendicitis, of mucous colitis, or of cancer, although my operating list averaged 400 major operations a year. While I cannot aver that all these maladies are quite unknown, I have the strongest reason for the assertion that they were remarkably infrequent. Among them the abdomen oversensitive to nerve impressions, to fatigue, to anxiety or cold was unknown. The consciousness of this part of their anatomy was, as a rule, related solely to the sensation of hunger. Indeed, their buoyant abdominal health has, since my return to the West, provided a remarkable contrast with the dyspeptic and colonic lamentations of our highly civilized communities. The difference in health between these Indians and Europeans is one of diet. The people of Hunza live on the unsophisticated foods of nature: milk, eggs, grains, fruits and vegetables. Probably one in every 10,000 has seen tinned salmon, chocolate, or a patent infant food."

One of the leading physicians in London, Dr. Leonard Williams, in an address in 1920, published in the British Medical Journal, states in no unclear words the intriguingly close relation between diet and health: "Let us take a broad view of the question; here is a community of civilized individuals whose members, to the extent of about eighty-five per cent suffer chronically from the cradle to the grave from diseases and disorders of the buco-gastro-intestinal tract. They suffer from dental caries, adenoids and tonsils, dyspepsia, pancreatic and hepatic disorders, appendicitis and constipation, and the long tract is dotted and punctured with malignant diseases. What is the cause? If I were to state this problem to any one present, or to any one with a scientific training, I venture to say that his instant reply would be to inquire into the dietetic habits of this community and correct its errors".

An interesting illustration of the influence of food on health is also to be found in the experiences of the nations during and after the World war. In most European countries, owing to restrictions in diet, the morbidity and mortality resulting from malnutrition and all other diseases were markedly increased. In glaring contrast to this increase is sickness and death, stands out the results of an adequate mode of nutrition on the health of the population of Denmark. Under the guidance of Dr. Hinhede(1) the country adopted a dietary which proved very effective in maintaining health. The sick lists and the mortality rates were the lowest of all the European countries, and there was, furthermore, a definite reduction in the incidence of infections, including tuberculosis.

Nutrition is assuming greater and greater significance to people who possess health as well as to those who begin to look for it after they have lost it. Henry Ford, the maker of automobiles and aeroplanes, whatever faults he may possess, has at least the great virtue of looking into the future and chosing with remarkable uncanniness the paths leading to progress. Listen to what he says in reference to nutrition: "The question of food is the most vital problem facing the world today, and strangely, it is the most neglected science in the world — I do not mean failure to eat because of lack of food. We eat plenty of food; there is no dearth of it. Rather, I mean we are starving ourselves of the organic elements contained in food which our bodies demand, because we do not recognize the functions of metabolism and the relative values of certain foods." Ford is contemplating establishing an institute for research in nutrition, and he has already called into consultation, Dr. Elmer V. McCollum and Dr. Graham Lusk.

THE PHYSICAL AND CHEMICAL CONSTANTS OF LIFE

Let us resume our discussion of food and metabolism. From the standpoint of practical medicine it is very important to realize that life can continue only when certain physical and chemical factors remain constant. Three such important factors concern osmotic pressure, ionic concentration and acid-base equilibrium. The inorganic content of the food aids in maintaining proper relations with reference to osmotic pressure. The acid or base-forming elements of food, the ammonia derived from decomposition products of protein, the amino acids, and the acid compounds of intermediate metabolism aid very materially in maintaining or destroying the normal ionic concentration or the acid-base equilibrium.

One of the most important properties of blood lies in its ability to regulate its composition with reference to osmotic pressure and hydrogen ion concentration. How is the composition regulated? Excess of acid, base or salt are continually being removed from the kidney, the gastro-intestinal tract and from the lung. Since the blood aims to keep itself constant in composition with reference to salts and hydrogen ions, we conclude that the lung, intestine or kidney must necessarily keep up a qualitative and quantitative variation in the elimination from the blood of unwanted products.

CONTINUOUS PRODUCTION OF ACID IN THE BIOLOGIC ORGANISM

Let us concern ourselves at this moment with the problem entailed in keeping a constant hydrogen ion concentration. It is remarkable, indeed, how many sources contribute to pour acid into the blood. In the first place it is to be remembered that the products of digestion of protein is amino acid, and of fat, fatty acid. These acid products of digestion are neutralized in the small intestine, but the alkaline substances necessary come from the blood. Still more acid comes in as a result of other biologic processes. Glucose as such cannot be utilized for oxidation. It must, therefore, be broken up into small chemical aggregates. This fragmentation results in the formation of large numbers of organic acids, among them formic, acetic, oxalic, pyruvic and lactic acid. A small portion of these acids pass into the urine unneutralized, another portion finds its way into the urine in the form of salt, while by far the larger portion undergoes complete oxidation to carbon dioxide and water. Work and exercise increase the lactic acid of the blood and of the urine. In asphyxia the quantity of acid fragments for want of oxygen is larger than normal. One of the most important products of complete oxidation itself is an acid. A great part of the carbon of fat, protein and carbohydrate is oxidized to carbon dioxide, the anhydride of carbonic acid.

In view of the constant formation of acid in metabolic processes it is not at all surprising to find in the biologic organism an elaborate mechanism for neutralizing and for removing excess of acid. For the purposes of neutralizing, our alkali is obtained from the sodium, potassium, calcium and magnesium of the food. Ammonia comes from the protein decomposition products, the amino acids. By a de-aminizing process the latter lose the amino groups, which are converted into ammonia. Some of the acids, like lactic acid, find their way into the urine in the form of ammonium salts. While the blood contains little ammonia, 0.1 to 0.2 milligram per 100 cc., urine contains a considerable amount, about 0.7 gram per day. Ingestion of mineral acid, like hydrochloric acid, brings about an increase in the ammonia output. Some of the ammonia obtained from amino acids is used up to neutralize carbonic acid. The ammonium carbonate resulting loses one molecule of water to form ammonium carbamate, which in turn loses another molecule of water to form carbamide or urea. By far the greater part of carbonic acid, however, is eliminated by the lungs in form of carbon dioxide.

In cases of emergency, sodium, potassium, calcium or magnesium may be removed from bone or muscle in order to meet with an extraordinary demand necessitated by excess of acid. Tissue protein may also be involved. These and the amino acids are amphoteric. They have the power to neutralize both acid and base. The carboxyl group of the amino acid and of the protein can neutralize alkali, while the amino group, which is akin to ammonia, holds the power to neutralize acids.

BUFFER SYSTEM IN THE BLOOD

In order to meet any acids sent to the blood as a result of tissue metabolism, the blood, that is the cells and the plasma, are especially provided with a buffer system.

Buffers, according to Van Slyke, are salts of either weak acids or bases. They enable solutions like the blood plasma, in which they are present, to receive additions of limited amounts of either acid or alkali with no change or very little change of pH. The important buffers of the blood are carbonic acid, the bicarbonates, the phosphates, and the proteins, hemoglobin, serum albumin and globulin. The buffer is present in part as the weak acid in the free state, and in part as the salt of a strong basic element, like sodium or potassium. L. J. Henderson has worked some very important laws in relation to the buffers of the blood. One of them is that the hydrogen ion concentration of the buffer solution, that is the blood, is proportional to the ratio

$$\frac{HA}{MA}\left\{\frac{\text{free buffer acid}}{\text{buffer salt}}\right\}$$

From the actual buffers in the blood, we have the following ratios:

$$\frac{H_2CO_3}{MHCO_3}\left\{\frac{\text{carbonic acid}}{\text{Na or K bicarbonate}}\right\}$$

$$\frac{MH_2PO_4}{M_2HPO_4}\left\{\frac{\text{acid phosphate}}{\text{alkaline phosphate}}\right\}$$

$$\frac{HHbO}{MHbO}\left\{\frac{\text{oxyhemoglobin}}{\text{K oxyhemoglobinate}}\right\}$$

$$\frac{HHb}{MHb}\left\{\frac{\text{hemoglobin}}{\text{K hemoglobinate}}\right\}$$

$$\frac{H}{M}\ \frac{\text{albumin}}{\text{albuminate}}$$

$$\frac{H}{M}\ \frac{\text{globulin}}{\text{globulinate}}$$

(M denotes any monovalent base, such as sodium or potassium. In the plasma it is sodium, and in the cells it is potassium).

The carriers of carbon dioxide in the blood are substances which hold alkali in combination. Since 80 to 95 per cent of the alkali furnished to neutralize carbon dioxide comes from the potassium salt of hemoglobin, it follows that the blood pigment, besides acting as carrier of oxygen, also functions as a carrier of carbon dioxide. A very slight quantity, indeed, of this gas is carried by the other buffers, the phosphate in the cells and the protein in the plasma.

The exact mechanism of the acid base balance and the part played by the buffers in the cell and in the plasma, is indeed, a very interesting phase of physiology. The reader who is desirous of getting a more comprehensive view of this important regulatory mechanism is referred to the classic papers and reviews of Henderson(2), Van Slyke(3), Wilson(4), and Shohl(5). Suffice it to say at present that the CO_2 finally finds its way into the plasma in the form of free carbonic acid and in the form of bicarbonate.

In the plasma the following reactions occur:

$$H_2CO_3 + NaCl = HCl + NaHCO_3$$
$$H_2CO_3 + \text{Na proteinate} = \text{H protein} + NaHCO_3$$

In the cell the following reactions take place:

$$H_2CO_3 + K_2HPO_4 = KH_2PO_4 + KHCO_3$$
$$H_2CO_3 + KHbO = KHbO + KHCO_3$$
$$H_2CO_3 + KHb = KHb + KHCO_3$$

(All the reactions given are reversible).

The hydrochloric acid liberated in the plasma at once passes into the cells, and is neutralized by the alkaline buffers. The effect of this reaction is to render the cell more acid. This condition is equivalent to decreasing its holding power for carbon dioxide and consequently to increasing the plasma bicarbonate.

In view of the final preponderance of bicarbonate we may say that the hydrogen ion concentration of the blood depends upon the ratio

$$\frac{H_2CO_3}{MHCO_3}\left\{\frac{\text{carbonic acid}}{\text{bicarbonate}}\right\}$$

Val Slyke and Cullen have shown that the normal CO_2 content for the whole blood lies between 43 and 55 volumes percent at 40 mm. CO_2 tension. Of this amount these investigators have shown that approximately 1-20 occurs in the form of carbonic acid, and 19-20 in the form of bicarbonate. In view of this fact the buffer acid-buffer salt ratio can be written

$$\frac{H_2CO_3}{MHCO_3} = \frac{1}{20}$$

THE PRACTICAL VALUE OF THE CARBONIC-ACID-BICARBONATE RATIO

The ratio of carbonic acid to bicarbonate is quite important in predicting a reaction indicating a normality, or one of acidosis (hypoalkalinity), or alkalosis (hyperalkalinity). A normal pH may be maintained in health as well as in disease. In health a normal pH is the resultant of a normal acid-base balance. In disease a normal pH may prevail because of a compensated alkali deficit or compensated CO_2 deficit, or a compensated alkali or CO_2 excess. A decrease in the numerator and a corresponding decrease in the denominator, or an increase in the numerator accompanied by a corresponding increase in the denominator would give a fraction unchanged in value, and consequently there would be neither drop nor rise of pH. A compensated alkali deficit may occur in moderate diabetes or nephritis, where the fall in bicarbonate is balanced by a fall in carbonic acid. A compensated CO_2 deficit is occasioned by the increased breathing necessitated by the diminished oxygen tension of high altitudes. In this case, the blood bicarbonate falls to meet the excessive respiratory loss of carbon dioxide.

A compensated alkali excess is found with moderate over-doses of sodium bicarbonate, when the carbon dioxide may be retained in sufficient quantities to offset the increased bicarbonate. A compensated CO_2 excess has been observed in emphysema. Because of the fact that the gas exchange is retarded in this condition, the CO_2 tension in the blood is increased; the organism raises the blood bicarbonate high enough to balanec the carbonic acid. An individual may have a high alkali reserve or a low alkali reserve and still have a blood with a normal pH. Thus we see how we may have a compensated acidosis with a normal hydrogen ion concentration. It is, therefore, necessary in order to get a true picture of the acid-base activity of the blood to determine both the alkali reserve and the pH. A compensated acidosis is analogous to a compensating heart, but neither one nor the other implies physiological perfection, but rather ability for adjustment on a lower plane of efficiency.

UNCOMPENSATED ACIDOSIS

A reduced alkalinity or uncompensated acidosis may occur as a result of uncompensated CO_2 excess or an uncompensated alkali deficit. The first condition occurs when the elimination of CO_2 is retarded either by physical hindrance or by depressing the respiratory center. In consequence, more carbonic acid is found in the blood in relation to the quantity of bi-carbonate, and the fall in the pH value indicates greater acidity. We have just described what actually does happen in breathing air rich in carbon dioxide (3 to 5 per cent) and also in morphine narcosis, which has a paralytic effect on the respiratory center. The pH of the blood swings toward the acid side when there is an increase in the numerator without a corresponding increase in the denominator, or when there is a decrease only in the denominator. In the first case we deal with the acidosis due to an uncompensated CO_2 excess, and in the second case we have an acidosis due to an uncompensated alkali deficit. This type of acidosis, in which there is a lowering of alkali carbonate without a proportional fall in CO_2 is to be found in diabetic or nephritic coma.

TISSUE ACIDOSIS—A LOCAL CONDITION DUE TO IMPAIRED CIRCULATION.

Rous and Drury(11) of the Rockefeller Institute, have recently pointed out that a normal pH or one even expressing an alkalinity greater than the normal may occur with the simultaneous existence in a localized area of a true uncompensated acidosis. This local or "outlying acidosis" as the investigators call it, they were able to determine by the injection of suitable dyes which served as delicate indicators in the tissues themselves. The local condition of acidosis results from local circulatory perversions. These may occur in shock, in certain kinds of acute anhydremia, and in severe hemorrhage producing ischemia in some tissue. The ingestion of alkali by mouth or its administration subcutaneously or intravenously will not correct the local tissue acidosis, unless the circulation is brought to normal.

ALKALOSIS

Disturbance in the acid-base equilibrium may bring also about an alkalosis or a hyperalkalinity. There are two types: (1) alkalosis due to uncompensated CO_2 deficit and (2) alkalosis due to uncompensated alkali excess. The first form may be due to continued deep breathing. A decrease in the numerator tends to a relative increase in the bicarbonate. Excessive ventilation of the lungs decreases the carbonic acid and relatively increases the bicarbonate. The result is an alkalosis. The pH of the blood may rise as high as 7.6 or 7.8. Thus we see how hyperpnea brings about an alkalosis, due to an uncompensated CO_2 deficit. The other type of alkalosis is due to an uncompensated alkali excess. The quantity of alkali is relatively greater than the quantity of carbonic acid in the normal ratio. This increase in carbonate without a parallel increase in carbonic acid may occur after overdosing with sodium bicarbonate. It is also the type of alkalosis occurring after loss of hydrochloric acid due to vomiting as a result of pyloric obstruction, or after loss of gastric acid due to continued washing out of the stomach for some days. The cause of gastric tetany after continuous loss of hydrochloric acid is to be attributed to the rapid increase in the alkalinity of the blood.

Generally speaking, the presence of the buffer compounds keeps the hydrogen ion concentration of the blood from straying too far above or too much below the normal, which is represented by a pH of 7.35 or 7.4. Variations from this figure occur, but the limits of variation within which life is possible are not yet fully known. On the acid side, Barr, Himwich and Green(6) reported a pH of 7.05 after short periods of strenuous muscular exercise. On the alkaline side, Davies, Haldane and Kennway(7) found after forced breathing a pH of about 7.85. Blood as acid as pH 6.95 has been reported by Hasselbalch and Lundsgaard(8), Van Slyke, Austin and Cullen(9) and as alkaline as pH 9.00 by Dale and Evans(10). The very low or very high pH figures may represent temporary conditions. Ordinarily the highest alkalinity met with is a pH of 7.7 or 7.8. This figure represents an alkalosis and is accompanied by tetany, just as a pH of 7.0 represents an acidosis and is accompanied by coma.

THE ORGANS CONCERNED IN THE ELIMINATION OF ACID

THE RESPIRATORY TRACT

Ordinarily acids or bases tending to accumulate in the body are eliminated. In the process of elimination certain organs are pressed into service. The volatile acids, like carbonic acid, are excreted through the lungs. The lung daily eliminates a quantity of acid equivalent to from 20 to 40 liters of normal acid, while during the same time the kidney excretes fixed or non-volatile acids and their products of neutralization, salts, equivalent to from 500 to 1,000 c. c. of normal acid. Not only by far is the largest percentage of acid formed in the body eliminated by way of the lung, but it is eliminated without the loss of any base from the body.

THE RENAL TRACT

One of the important functions of the kidney is the power of forming acid urines from a neutral or alkaline blood. The acidity of the urine depends upon the presence of free organic acids, acid phosphate, acid neutralized by ammonia, acids neutralized by inorganic elements, carbonic acid in the form of bicarbonate and carbonate. Fully 30 per cent of the acids excreted occur in the form of free acid. The actual amount depends upon the diet. The compounds in the urine equivalent to 500 to 1000 c. c. of normal acid, resulting from a mixed diet, are distributed as follows:

Acid phosphate	100 to 200 c. c.
Acid neutralized by ammonia	300 to 400 c. c.
Organic acid	0 to 150 c. c.
Carbonates	10 to 40 c. c.

In addition the normal urine excretes nearly all the chloride, 80 per cent of the potassium and sulphur, 50 per cent of the phosphorus, 20 to 30 per cent of the calcium in adults, and only 5 to 10 per cent of the calcium in infants.

The titratable acidity of the urine expressed in cubic centimeters of decinormal alkali required to neutralize the 24 hour output varies from 200 to 500 c. c. with an average of about 350. The titratable acidity is dependent on diet. It is low on a base-forming diet and high on an acid-forming diet. Vegetables and fruit, which are base-forming, decrease the acidity, while meat, cereals, whole wheat products, and fruits containing benzoic acid, such as prunes and cranberries, increase the acidity. The ingestion of sodium bicarbonate decreases the acidity. Fasting markedly increases it. The H-ion concentration of the urine or its true acidity varies between 4.80 and 7.50, with a mean value of 6.0. In most pathological conditions the H-ion concentration is increased, making the urine more acid.

The kidney not only participates in the maintenance of the acid-base equilibrium by removing acid, but, unlike the lung, it also participates by removing alkali. After the ingestion of sodium bicarbonate, the urine may become alkaline. The hydrochloric acid of the gastric juice is said to be made from the monosodium dihydrogen phosphate. The chlorine ion comes from sodium chloride, and one hydrogen ion is removed from the dihydrogen phosphate. As a result, this acid salt is converted into the disodium monohydrogen phosphate, which is alkaline. During the secretion of hydrochloric acid for digestion, the blood increases in alkalinity, and as the excess of alkali is thrown off by the kidney, the urine becomes alkaline. Forced breathing removes the carbon dioxide from the blood and also renders it more alkaline. This increase in alkalinity is immediately reflected in the secretion of an alkaline urine. As a matter of fact the regulatory mechanism for acid-base balance is so delicate that the urinary composition varies from day to night, and even from hour to hour.

THE GASTRO-INTESTINAL TRACT

The large intestine is also concerned in the regulation of acid-base equilibrium. The bowel excretes alkali-forming elements. The greater part of the calcium, magnesium and iron leaves the body through the feces. The large intestine may cause acidosis by excreting too much alkali, as is the case in diarrhea. Cow's milk given to infants increases the loss of alkali through the feces. According to Ylppo(12) the pH of feces after breast feeding is acid (about pH 5.0), while after cow's milk it is alkaline (about pH 8.0). A low gastric acidity may bring about alkalosis by failure to cut down the alkalinity of the contents of the small intestine. Too high a condition of alkalinity is conducive to the precipitation and consequent lack of absorption of iron, and of calcium and phosphorus in the form of phosphate. Lack of acidity or low acidity may also be responsible for acidosis, for such condition may result in diarrhea with consequent loss of alkali from the intestines.

(To be continued)

SOME PROBLEMS IN DIAGNOSIS*

A. L. Cooper, B. Sc., M. D., Scottsbluff, Nebraska

The rapid advances made along all lines of scientific endeavor, the last thirty years have in no instance been more marked than in the sciences of medicine. The comparatively simple art of medical practice in common vogue three decades ago, has rapidly made way for the more complex, scientific and efficient practice of today. The family physician, the kindly confessor, and counselor of the past, has found his place usurped by public health work on one side, and the specialist on the other, until apparently he has been threatened with extinction by reason of his uselessness.

However while the changing conditions in medicine may mean equally divergent methods of meeting the changes, the real needs, and problems remain the same. The general practitioner still has a place in the field of medicine, and instead of having his usefulness curtailed finds it broadened and made more efficient, if he has kept abreast of medical advances. The increased general knowledge of health matters among the laity is making it easier to reach the individual early in his problem, and is rapidly raising the standard of efficiency demanded of the physician in his work. The tradition and impericism of the past, with their air of mystery have of necessity given way to constructive scepticism and scientific investigation. The true nature of normal and abnormal biology is being revealed; and health and disease are being stripped of their mysticism. The rapidity with which new knowledge has been added has made difficult its assimilation and practical application to the art and practice of medicine. It has often been bewildering to both laity and profession. The pendulum of progress swings from one extreme to another; but with each swing passes over another settled issue between.

While medical knowledge becomes more complex and broadened, it also becomes more exact and systematic; and the problems of diagnosis, prevention and treatment more simplified. In the multiplicity of things new that come in, the practitioner finds it difficult to separate fact from theory, weigh its value and add it to his armamenterium. Too often he forgets that what he has is still valuable and even indispensible; and that the new knowledge should not be substituted for, but should be added to the old. It is too often forgotten that medicine has a definite foundation in the biological, physical and chemical sciences; that its basic structure is fixed and fundimental, and that real progress is made only when this foundation is built upon. This is as true of diagnosis as it is of prophylaxis or therapy.

---

*Read before the annual meeting Nebraska State Medical Association, Lincoln, May 12-14, 1925.

The object of this brief paper is to bring to mind a few of the problems of diagnosis. We can do no more in this limited time than mention some of the basic factors involved and a few of their inter-relationships. Perhaps from this simple outline we may be able to draw helpful conclusions. We offer no apology for mentioning principles that are elementary or axiomatic. If our observations have served us correctly, the basic principles of diagnosis are many times haphazardly applied, or not applied at all in attempting to solve diagnostic problems. The simple and effective measures at hand are often forgotten in part, after leaving school and clinic, or their relative values left unanalyzed or poorly understood. How infrequently do we go back and carefully review what we learned in student days? How seldom do we analyze this knowledge in the light of experience, and fix more firmly elementary facts, measure their values and build them into our routine as best fits our individual abilities and needs?

We wish to consider diagnosis from the standpoint of the general practitioner. It is he who has the broadest field in diagnosis and comes in closest contact with its many sided problems. He is the one who sees, or should see, pathology in its incipiency, and has the responsibility of bringing help to the patient when proper therapy accomplishes the most.

His greatest service is early diagnosis, for on his success of this part of his work, depends the possibilities in prophylaxis and therapy. The general practitioner should first be a competent diagnostician; a therapeutist second. The specialist is more appropriately concerned with therapy, whatever its nature, medical, surgical, dietetic, etc. However, he sees too often the end results of pathology, when therapy is least necessary or effective. Too often he sees pathology that has never been recognized or worse, has been wrongly diagnosed and treated.

What are some of the factors that enter into diagnosis, and what are their comparative values? We may group them briefly as: the doctor himself, the patient, the condition or pathology present, the methods of gaining information; history, symptomatology physical diagnosis, laboratory work, and the end results good or bad.

First the doctor himself:—Is he born, is he made, or should he be both? Considering the past history of the profession, natural aptitude must have played a very large part in determining an individual's choice of medicine as a vocation. Remuneration was uncertain, and the real physician must have been drawn to his work largely by natural abilities and inclinations. Possibly this accounts in part, for the pioneers of marked distinction in one field or another.

Now that medicine fits in as one of the definite needs, of our complex civilization, and has become a business as well as a profession, less natural incentives may often be a determining factor. Now, he is apt to be less "born" and more nearly "made." Aside from natural abilities and inclinations which may be brought to full development by proper training, one factor is of prime importance. This is the physician's habits of observation, and his reaction to experience. The over confident, to whom all problems are an open book, represent one extreme. The over cautious who shrink from simple difficulties characterize the other. The ability of either to profit by experience, unguided is very limited, unless there is associated, that rare faculty, accurate observation, and constructive analysis.

Isolation in practice, the often unfortunate lot of the general practitioner, begets confidence in the one, through familiarity. He accepts his observations as facts. The other is apt to develop a type of inferiority complex which prevents him from acting upon his best judgment. Group practice, or frequent consultation, and close association, is a great help in overcoming these tendencies, as are also hospital staff organization, and active medical societies.

The material we work with is human life. How important then, that the physician should be both, by nature adapted to the requirements of his profession, and by thorough training be master of its sciences. I have no sympathy with the advocates of lowered entrance requirements for the study of medicine, or abreviations of the course of study and training, as a solution of a supposed shortage of rural physicians. Possibly much can be done to make more efficient the training in the time now required, but, quality must never be sacrificed to quantity, if we are to remain equal to the responsibilities that are ours.

Second:—the patient: It is he as a unit upon whom our attention is bestowed, and for whose benefit primarily, our major effort is put forth. The ease or difficulty of solving his diagnostic problem, depends on many characteristics, such as age, intelligence, education, language, ability or willingness to cooperate, etc. Little need be said of this factor, except that to the physician who is a thorough diagnostician, the varying types of patient offer little difficulty, for he has at his command many infallible methods of getting at the truth from many different angles. But to the superficial worker who can go little farther than a history and a casual examination, the patient as a factor, is of prime importance in the success or failure of the diagnostic venture.

A third factor is the condition itself functional or pathological, that is being investigated. It presents great extremes of ease or difficulty in arriving at real facts. A loose fracture of the shaft of the humerus, in a thin individual might offer little diagnostic difficulty even to a layman, but an early primary carcinoma may be obscure even to the best trained physician. Johnnie's stomach ache in green apple time may be easily solved by his reluctant admission of having partaken of the forbidden fruit, and the more certain evidence, the undigested green apples in Johnnie's vomitus. But the dozen or more possibilities underlying Mrs. Jones' "nervousness" and "general debility" may tax the limits of diagnostic investigations. Again to be able to name the disease or condition that is the cause of the patient's abnormal health, while all important as a starting point, does not constitute a diagnosis. Diagnosis is complete only when all possible knowledge is gained of the location and extent of the pathology developed, and the full meaning of the abnormal functioning produced. For example, a history of chancre, the finding of a gummatous lesion and a four plus Wassermann, probably means syphilis, but it is only after a most searching physical examination that we may know the type of syphilis present, and the extent of damage done the individual body, that our diagnosis is complete. Only after this has been accomplished, are we in a position to make an intelligent diagnosis and institute necessary treatment.

The fourth consideration is the methods or means used to gain the information, upon which diagnosis is based. Information is obtained indirectly from the patient's history, past and present, from the symptomatology, and the law of probability. These constitute subjective evidences. Directly, information is gained from objective findings. These consist of physical examination, including x-ray, laboratory procedures, therapeutic tests, etc. The patient's past history is largely a matter of memory, as written records are seldom obtainable. The present history and symptomatology are more or less colored by the patient's mental states and emotional reactions. Due allowance must always be made for the varying ability of the patient to interpret his condition and feelings and for the language in which he attempts to convey a knowledge of them. The same statements from different individuals may be describing very different conditions or sensations. For example such common expressions as headache, backache, and pain in the stomach. Due allowances must also be made for the patient's mis-information and preconceived judgments. The patient's educational attainments offer no assurance that these factors do not enter.

Symptomatology is largely the patient's ideas of pain and discomfort and seldom include much of value in accurate observation of objective conditions.

The physician must proceed with due caution if he is to get at real facts from subjective sources alone. However in spite of the general difficulty of getting reliable facts from the history and symptomatology, these sources are very important in some conditions. Thus a definite sequence in the onset of symptoms in a brain tumor may point directly to its anatomical location. The law of probability often gives vital clues to the most likely cause of trouble. Thus age, sex, occupation, season, locality, presence of epidemics, etc., lend very valuable aid in given cases. Considered in general, however, history and symptomatology and probability, offer evidence only, and do not constitute proof in establishing diagnosis. Yet how often do we go no farther than this evidence before making conclusions, that may have too large a place in our final diagnosis.

Physical examination constitutes the most positive means of determining the location and extent of pathology. It shows the patient's physical resources and usually gives us the safest evidences upon which to base a prognosis. Physical examination not only aids in naming the disease or condition, but more important, gives the nature and extent of the damage done by it. Thus a history of loss of weight in a youth, with chronic cough, night sweats, afternoon temperature, etc., may point to active pulmonary tuberculosis, but only careful and complete physical examination will show the extent of the infection and its severity.

We need not consider separately, here the four cardinal methods of securing information objectively in physical diagnosis. Inspection, palpation, precussion, and auscultation, represent our senses of sight, touch and hearing. The ability of the individual physician to use them depends upon the acuteness of these senses, the accuracy of his observations, and soundness of his judgment. Practically, given moral sense perception, his success depends upon the thoroughness of his training and the amount of care used in its application. Carelessness and lack of thoroughness, I am sure, account for much of the failure in physical diagnosis. The thermometer, stethoscope, ophthalmoscope, and sphygmomanometer are of great assistance in increasing accuracy. Fluoroscope and radiography give us an added sense as it were, a sense of relative transparency, which with correct interpretation, adds greatly to our knowledge, by extending sight beneath the surface.

A thorough knowledge of anatomy and physiology, normal and pathological, is a necessary foundation for physical diagnosis. What about laboratory examinations; how can they aid us? The records of the microscope, the culture tube and the test tube, the burrette and the colorimeter; are they definite and final? Do they give us unquestionable results; can these results be substituted for history or physical examination? Or should they be used simply as additional data in collecting evidence and establishing proof?

The criticism has been made that the recently trained physician depends too much upon the laboratory for diagnosis, and loses sight of the clinical evidences obtainable by thorough study of his patient. The criticism is just if true. The laboratory findings taken alone are of little more value than history and symptomatology taken alone. Each but adds to and corroborates our main body of facts found by physical examination. The results of laboratory work are reliable when faulty technic and misinterpretation can be excluded, in the same way that history and symptomatology are reliable when due allowance is made for the personal equation of the patient. The advantage, however, is much in favor of the laboratory, for proper training and care can mitigate against errors. These are matters under our own control. But the patient is beyond us. We must take him as he is. When properly interpreted and correlated laboratory findings add the element of proof, to our other findings. The positive Wassermann, positive diphtheria culture, glycosuria with a high blood sugar, and many others confirm our diagnosis and often add much to our knowledge of how far the condition has gone.

There remains physiologic effects and the test of therapy, again valuable only when they corroborate our other work. How many false premises have been assumed in their name. The therapeutic agent is applied, the patient improves, and too often, coincidence has been assumed to be cause and effect. And last, there is the autopsy—that most valuable teacher, which, together with the view at the elbow of the surgeon, must ever humble our pride and keep us mindful of the limitations and imperfections of our work.

Diagnosis, then, includes all the factors which enter into our task of securing knowledge of the disease, the extent of the pathology and the natural and resultant resources of the patient. Our problems in diagnosis may vary from the most simple with obvious solution, to the most difficult, which may be beyond the possibilities of complete comprehension. Whether simple or difficult, there is no place in diagnosis for the careless or superficial. With the fundamental knowledge and training necessary to its accomplishment, systematic application and due care will bring a practical solution in ninety per cent of the cases. The opportunities and responsibilities of the general practitioner, challenge the very best in diagnostic ability. He is in a field where early and efficient diagnosis, makes possible the greatest benefits in prophylaxis and therapy. We are known by the fruits of our efforts. I am sure the solution of a few of our problems, other than diagnostic, would at least be simplified, by greater care and efficiency in this most important function of our profession.

DISCUSSION

RODNEY W. BLISS, M. D., (Omaha): This paper of the Doctor's is so broad it is difficult to discuss, and yet it is an extremely valuable paper, and certainly the Doctor is to be commended in telling us a lot of things we must think about.

Diagnosis is the backbone of medicine. Diagnosis must start with the man who sees the case first, and that is usually the general man, whether country or city doctor. Upon his proper conception of health and disease depends very often the life of that patient. The difference between the regular school of medicine physician and the cultist is simply that the medical man first makes his diagnosis, or at least his probable diagnosis, before he institutes therapy. The cultist has one brand of therapy he pushes on every patient and prospective patient.

It seems to me we can learn a lot from what the Doctor has said today. We should spend more thought on diagnosis. We should spend more thought on what the patient tells the doctor. We must learn how to valuate or evaluate what he tells us. Remember it is 60 per cent of our diagnosis. We must add to that our accumulated knowledge of medicine and what we can see, what we can feel, and what we can elucidate by careful physical examination. Those are the two big things in diagnosis, as we know 80 to 90 per cent of our cases can be diagnosed in that way. Our laboratory data add a little. They should be used; they should not be abused. The Doctor said a lot of things that should make us all think.

Medicine starts with the general man. This general man should be well trained. I do not believe this general man can spend too much time in the fundamental sciences, with all respect to our President who gave us such a wonderful talk last night. We need training. If anybody needs it, it is the man who sees the case first.

I appreciated the Doctor's paper very much.

J. E. SUMMERS, M. D., Omaha: Not only the general man, but the specialist, needs training. This specialism is going to such a degree that those who work in rhinology have reached the stage when they only work on one nostril! I want to be complimentary to the Chair. We have in him one of the best all-'round specialists I know of in this state or any place else; but there are others.

Dr. Harry Cushing says the difference between a surgeon and a physician lies only in their therapeutics. A surgeon should study internal medicine as well as he can. At one o'clock every Saturday our faculty meets, and somebody exhibits a case in neurology or surgery, or some of the departments, so we try to keep one another informed as to what is going on. If a surgeon would read medicine and the general man would read surgery, it would be to the advantage of our patients; and that, I take it, is the keynote of the Doctor's paper. Laboratory work should be valued for what it is worth, and no more.

J. H. DOWNING, M. D., Rising City: The Doctor's paper is one of the things that offers something I think is of a great deal of value to a big proportion of the doctors assembled here, because it gives a little idea of what we might do when we are ten miles in the country and haven't that laboratory and those laboratory appliances at our command; where we have to deal with cases where the urgency is just as great as with the people who have access to laboratories.

I belong to that army of fellows who live in the small cities, and must go into the country to see the bigger portion of our patients; and I highly appreciate every idea that will help us to meet the emergencies we must meet in those places. We cannot take a laboratory with us, and it is difficult sometimes to make laboratory tests of these things. Sometimes we are more proficient by what we read and are urged to do at these medical societies, in some of this laboratory work, than we suppose, because we are beyond the reach of big laboratory possibilities.

Everything that will help us when we have to go out in the country of nights is deeply appreciated. The suggestions of this Doctor's paper were more along our line; and I believe 50 per cent of the audience have the same thing to contend with I have.

W. J. DOUGLAS, M. D., Atkinson: I want to voice my appreciation of Dr. Cooper's paper, and still I want to offer a little criticism. I am one of the fellows who practice in the country, and I am not ashamed of it.

In the army, every man who went in was supposed to be healthy. When he came in on sick call, we did not pay much attention, but looked him over. If we did not find anything, he was all right. After the war, I had occasion to go into Chicago. The men were still imbued with the army idea, and I got a new idea.

The average patient comes in and you sit down and take the history, and he tells you of a pain here or there. That is the thing uppermost in his mind. The thing for you to do is to concentrate your attention in your objective examination to the point given by the patient. After the war, I did not care about the history of the patient. I simply made the objective examination and took the history. In country practice, if you will reverse your procedure and make your objective examination and then take the history, you will find out why you are making so many mistakes.

W. L. ROSS, M. D., Omaha: I wish to speak on one part of the discussion. It is funny how papers of this type react on the different members. I expected something to be pointed out in definite diagnosis. Instead of that, it appeared to me it should have been to a lay audience who expected to take up some medical studies, and he was telling what different studies would be expected of them.

In a conversation with Dr. Long yesterday, we were comparing our methods of studying and getting the physical symptoms and knowledge, when we were located in isolated places. It is his habit after visiting a patient to go home and read up on that case. He keeps a number of good textbooks handy.

If 90 per cent will be diagnosed by case history and physical examination, you cannot train the student to do that by going around with him and pointing them out. If you will throw the responsibility upon the doctor and let him have the management and handling of that case as the older doctors have had to do, and go home and study up on that case in his best text books, he will get a better drill than you can give in a good many of the laboratories.

JOHN B. POTTS, M. D., Omaha: The Chair would like to defend himself a little. I think there is too much distinction made in our society meetings between the so-called country and city physician. With the present mode of transportation and the manner in which the doctors visit from one place to another, there is very little distinction between the two, except, as Dr. Downing has said, you cannot get to a laboratory with as much facility as if in the city. Otherwise, there is no distinction to be made.

As far as laboratory work is concerned, you hear a lot about it. As a specialist, it might be interesting to know what I try to teach the student. I tell him if he is as good as he should be, he should be able to make his findings without a laboratory by the inspection of the patient, by the history, and by the examination, in my field. That does not mean I do not believe in using the laboratory. Then I say, "You should be able to confirm your diagnosis in a certain percentage of cases with the laboratory. If you cannot the probabilities are your diagnosis is correct, and not the laboratory's. That applies to syphilis and practically any disease".

That is my standing on the laboratories, and I use them right along. Occasionally the laboratory will correct you on a diagnosis of sinus disease; on the other hand, it may fall down on a diagnosis which you have been able to make without it.

As far as your general reading, if following a special field, is concerned, if you come into my library, you will find two shelves on general medicine for every one on the ear, nose and throat.

DR. COOPER, closing: Doctor Young suggests I should not say too much. I suppose I need not say anything. The subject was brought up that was intended in the paper. The reason for writing the paper was the stimulation received from reading Dr. Pusey's articles recently in the Journal of the American Medical Association.

I cannot see where there can be any possibility of making better doctors with less training than they have now. There are great possibilities, perhaps, of making better doctors by some changes in the type of training we have; but the individual who is sick, who is suffering from whatever the condition may be — mental or physical — has a right to the best type of service he can get.

I think a good many of our other problems which we beat around the bush are really at the best our own lack of efficiency in the fundamental principles of our profession.

ACUTE APPENDICITIS IN CHILDREN*

A. W. Anderson, M. D., West Point, Nebraska

It is not our purpose in this brief paper to set forth anything new relative to acute appendicitis in children, either from a diagnosis or treatment standpoint. If we may hope that this short review will stimulate us to make earlier diagnoses and persuade earlier surgical treatment, forthwith reducing mortality, our efforts will not have been in vain.

Acute appendicitis is discussed at almost every medical meeting and perhaps some of us are tired of hearing or reading papers on this rather common affliction. We should not be, after hearing or learning the rather startling statement, made by Dr. Mayo at the last meeting of the American Medical Association in Chicago, that the mortality for acute appendicitis in general is higher at the present time than it was ten or fifteen years ago. This is not in accord with our other advances in medicine and surgery. Further, every general practitioner has treated and advised little patients similar to the ones we wish to report. We should therefore, be mutually interested in comparing our own individual cases with those of our fellow physicians and surgeons.

Acute appendicitis is comparatively rare under five years of age. Kelly collected a series of 16,571 cases and found only 2% of the patients were under six years of age, 8% between six and ten years and 16% between ten and fifteen years. Gatch and Durnam had three cases under five years in a series of 262, of all ages or a percentage of 1.14%. Beckman and Fenwick report one case twenty months old, ten in the third year, nine in the fourth year and twenty-three in the fifth year. One case in the first month and several in the first year have been reported.

In reviewing the literature we find, the younger the patient, the higher the mortality. Bancroft reports a mortality of 10.9% for the first decade. Beckman and Fenwick in their series of forty-three cases, report a mortality of 100% for the second year, 60% for the third year, 22.2% for the fourth year and 8.6% for the fifth year. Their mortality for the whole series was 25.6%. The mortality for a series of all ages varies from 6 to 9%. In Beckman and Fenwick's series, seventeen were operated upon on an average of four days after the first appearance of symptoms, and twenty-three on the third day. Only three of their cases were operated upon within twenty-four hours. This perhaps accounts for their high mortality.

In our series of twenty-six cases, twenty-three permitted operation and three whose ages were four, ten, and twelve respectively did not, although these three cases have had several typical acute attacks, but their parents have each time refused operation. This, at times is rather unfortunate for the patient, because some time, they may have an attack during which an operation will be delayed so long, that the patient's chances for recovery will be greatly lessened. Because they have recovered from a previous attack, the parents think they will recover once more without operation.

---

*Read before the annual meeting Nebraska State Medical Association, Lincoln, May 12-14, 1925.

Reviewing the records of the twenty-three cases where surgical intervention was permitted we find that in nine, the appendix had perforated and that there was free pus in the peritoneal cavity (or in 43.4%). Five of these perforated cases were operated upon within twenty-four hours, three within forty-eight hours and one on the sixth day after the first appearance of symptoms. This last case had been treated by Osteopathy for six days, before we were called to see him. He was a boy, nine years old. At the time of examination he had a temperature of 104, pulse rate of 140 and respiration of 38. He had a board like rigidity of the entire abdomen, moderate distention, and some vomiting, however, as there still was some audible peristalsis on auscultation, we decided to operate at once, which was done. Upon opening the abdomen we found an abundance of free pus; the small intestines were intensely red, slightly distended and had a marked tendency to creep out of the abdominal incision, which is a bad omen. There was no evidence of any walling off process whatsoever. The appendix was gangrenous, easily accessible and was removed with drainage instituted. The patient died on the fourth day from general peritonitis. We feel now, that this patient should not have been operated on at once, but should have been prepared by withholding every thing by mouth, proctoclysis, we prefer the gravity method, with ice to the abdomen and head of bed elevated at least eighteen inches. We feel that this measure, with late operation, might have saved this boy.

Our cases where operation was permitted, range in age from five to fourteen years, there being two at five years, two at six, one at eight, three at nine, two at ten, two at eleven, three at twelve, two at thirteen and five at fourteen years. In this series, nine were boys and fourteen were girls, which is however, not in accord with larger series, the percentage being slightly higher in the male.

Seven of the perforated cases had been given castor oil or salts, which seems to increase the tendency toward early perforation. Parents should be educated not to give cathartics indiscriminately in abdominal complaints in children.

Post-operation complications are said not to be as frequent in children as in adults, although post-operative hernias are more frequent. One of our cases developed a secondary abscess in the lower, left side of the abdomen which was first noticeable on the thirteenth post-operative day, and finally pointed in the rectum and was drained through this route. One suppurative case had a small post-operative hernia.

The mortality for the series is 4.3%. This is not higher than other reported series, but is still high. It might have been lower if we had done a late operation in this one fatal case. The importance of early operation is clearly set forth, also that appendices do perforate within twenty-four hours, that twenty-four hours is not a safe criterion and even if the appendix has perforated, operation within twenty-four hours is attended with a lower mortality, because your attack is staged during the period of invasion, and not in the stage of a spreading peritonitis as it often is on the third or fourth day. Reduction in mortality, then, will be in direct ratio to the length of time it takes to make a diagnosis and persuade surgical intervention. The younger the patient, the more difficult it is to make a diagnosis, however, the younger the patient, the less likely it is to be appendicitis. We feel that every acute abdominal case in children should be considered appendicitis, until it has been proven otherwise. It is a problem of differential diagnosis. It must be differentiated from the acute exanthematous diseases, pneumonia, pyelitis, dietary indiscretions, intestinal infections, osteomyelitis of the ilium and upper femur, sarcoma, intussusception, etc. Many times this is very difficult and occasionally impossible without a reasonable length of time elapsing and close observation. The differentiation, however, can usually be made by a carefully taken history noting all the signs and symptoms present together with a thorough physical examination aided by the laboratory findings.

Our responsibility to the little patient, whose judgment is immature, whose fate is in the hands of his or her parents, rests not only upon our ability to make an early diagnosis, but also on our ability to present the facts to the little patient's parents in such a way, that our convictions, at once, will be harmonious with theirs, for we must have their co-operation and consent before early surgical intervention is possible.

Many times, especially in the rural districts, are we confronted by delayed co-operation. To overcome this obstacle either the public must be further educated as to the gravity of appendicitis or we must specialize more in psychological presentations. Personally we have more faith in the latter.

CONCLUSIONS

1. The earlier the diagnosis is made and surgical intervention persuaded the lower the mortality.
2. Perforation with spreading peritonitis occurs more often and earlier in children than in adults.
3. Indiscriminate giving of cathartics to children with abdominal complaints is often dangerous.
4. Individualization, and specialization in presenting the facts to the parents so that we may have their early co-operation.

DISCUSSION

E. WILLARD POWELL, M. D., (Omaha): I think this is a very good paper. I do not believe we are fed up too much on appendicitis, and do not believe we ever will be. I think the diagnosis is perhaps more difficult in children than in adults. In the very young, I have had one case of appendicitis in a child nine days old—a gangrenous appendix which ruptured inside the first twenty-four hours.

I think there is one little point that is quite important in the location of the appendix in children. Do not lost sight of the anatomical condition. Your ascending colon in a child is extremely high. Without thinking, I believe many overlook that point in your examination. You will find the appendix high in a young child.

I believe, when the classical symptoms and early blood picture especially the leukocyte count point to appendicitis, in immediate operation and short operation. The time element is a mighty important thing with children; and, of course, when the appendix is ruptured, don't be afraid to put in a big drain. What if they do have post-operative hernia? I would rather have a child alive with post-operative hernia than a dead one with a little bit of a post-operative scar. Anybody can fix a post-operative hernia. Only an undertaker can fix the other.

Remember your point of rigidity is on your right rectus and high up. I thank you.

MAX EMMERT, M. D., (Omaha): I enjoyed the Doctor's paper very much and think he is to be congratulated upon his low mortality of appendicitis in children, and also upon the volume of work he has had.

Appendicitis in children is oftentimes overlooked. Not only the acute stages, but the chronic cases, are overlooked. These kiddies are treated for some flare up which will clear up, but they have repeated attacks. I have taken out the appendix and those attacks ceased. There is no reason why they should not have the sequelae attacks older people have. I think we should watch for these cases of appendicitis.

C. G. MOORE, M. D., (Fremont): I think in appendicitis in children we look too much for the classical symptoms. Very often you will get an appendicitis on the verge of rupturing with no indication of temperature or acceleration of the pulse. You may have a negative blood count. That is why I think we fall down many times in diagnosis in children.

J. B. POTTS, M. D., (Omaha): Have you done anything in blood counts?

DR. ANDERSON, (closing): A low blood count with high differential count is very significant. That is a cell count of eight or ten thousand with a polymorphonuclear count of 85 per cent, in children usually means pus. You sometimes get a high blood count in scarlet fever. I had a case with a blood count of 20,000 and a polymorphonuclear of 85 per cent. He broke out twenty hours later with scarlet fever, and the appendix cleared up.

PYURIA*

F. B. Young, M. D., Gering, Nebraska

Pus in the urine may arise from any part of the genito-urinary system from the cortex of the kidney to the meatus urinarius. This is obviously too extensive a subject to be discussed in detail in the time at our command, so I will refer especially to several points that appeal to me as being of definite and general interest.

The diagnosis of the presence of pus in the urine is comparatively simple, but the definite determination of the point of origin of this pus and of the pathological condition underlying its presence may tax our best diagnostic ingenuity. In the first place every sample of urine should be centrifuged and examined microscopically as a routine, this must especially be done with the first specimens examined in a given case. In the male this is all that is necessary to establish the presence or absence of pus, particularly if the second glass is used after the urethra is cleansed by the first passage, or after the urethra is washed out. In the female the urine may be contaminated by a purulent vaginal discharge, and such a simple manner of collection rendered useless, or even misleading. In such cases it is often possible, to secure an uncontaminated specimen, by having the urine passed after the use of a douche, or by packing off the vagina by the use of a cotton pledget. In case neither of these maneuvers are successful it will be necessary to use a catheter to secure an uncontaminated specimen. In this connection I wish to state that I do not regard the passing of a catheter as lightly as do some of my professional brethren, I consider that it is a very simple procedure, so simple in fact that carelessness is often followed by unpleasant or even disastrous results. It is my opinion that a catheter should never be used in the presence of an acute inflammatory condition of any part of the urinary system unless it is absolutely unavoidable, and then with the utmost of care, gentleness, and cleanliness. I feel that I have seen death caused by the use of a catheter in acute nephritis, and serious results follow its use in other inflammatory conditions.

---

*Read before the annual meeting Nebraska State Medical Association, Lincoln, May 12-14, 1925.

The first condition that I wish to mention is the pyuria of infancy and childhood, this condition is quite prone to occur in little girls and occasionally in boys, though less often. Given a child with a rise of temperature either regular or irregular and other evidences of illness it is very necessary that the urine be thoroughly examined. There will probably be no evidences pointing to any urinary disturbance, such as distress, frequency of urination, etc., but a microscopic examination will often show the presence of pus cells and an enormous number of motile bacilli, the Colon Bacilli. These cases usually arise from a point of infection in the intestinal tract which may or may not have been recognized, and are cases of true pyelitis. The infection is carried to the kidney usually through the blood or lymphatic streams, though it is claimed by some writers that it is the result of direct extension through a contaminated urethra into the bladder and on up the ureter to the kidney pelvis. This mode of infection is usually given as the reason that girls are more readily subject to the disease than are boys. The diagnosis rests wholly on a careful examination of the urine with the finding of pus cells, epithelial cells, and organisms. In small children it is sometimes quite difficult to obtain an uncontaminated specimen but this may usually be accomplished by attaching a light rubber bag over the meatus with collodion. If not, a catheter may be passed. If there is no vaginal discharge a sterile pledget of cotton may be placed over the meatus, but the objection to this is that the meshes of the cotton have a tendency to hold the cells and the organisms, and also it is difficult to secure enough urine for a test in this manner.

Treatment: These cases almost invariably yield readily to treatment if recognized early, but if permitted to run a long course without recognition and treatment, they will result in pyelo-nephritis with destruction of kidney tissue. It is seldom, practically never in early cases, necessary to resort to local measures or treatment, but in the late cases pelvic drainage and lavage becomes necessary, though this offers far more technical difficulties than in the adult. In the early cases treatment should be started with the use of alkaline diuretics with an abundance of water, the effort being made to flush out the whole urinary tract thoroughly. After about a week, this is to be followed by the use of Acid Sodium Phosphate and Hexamethylene to acidify the urine and render it antiseptic. These procedures are to be alternated each week, checking carefully to make sure that the urine is changed in reaction each time. Should this procedure not result in clearing the urine after three or four changes, Mercurochrome intravenously is to be used in dosage suitable to the age and weight of the child. I have seen no marked results from the use of Hexamethylene intravenously: it is well borne. However, I have seen two cases in which its introduction by mouth resulted in urinary hemorrhage. In addition to the direct treatment of the urinary tract it is necessary to put the child in good general condition, treating such intercurrent conditions as may be necessary, correcting the bowel condition by the use of medicine and diet, and if necessary changing the flora of the intestine. Cod liver oil and other tonics may become necessary. The external genitals must be kept carefully cleaned to prevent the possibility of reinfection.

A type of pyuria that occurs with great frequency is that of pregnancy, as a rule it is a pyelitis, though it may progress to pyelonephritis. It is super-induced by the pressure of the pregnant uterus upon the ureter thus obstructing the drainage of the pelvis of the kidney and rendering it susceptible to infection. As a rule the course of treatment previously outlined will relieve this condition, if it does not ureteral catheterization with lavage of the pelvis becomes imperative. As a rule it occurs in the third to the fifth month of pregnancy and shows some tendency to spontaneous relief when the uterus lifts fully out of the pelvis. In many of these cases a definite history pointing to pyelitis in childhood may be obtained, this infection remaining latent and harmless over a period of years until the interference by pressure causes it to again become manifest. While this condition is not uncommon, and as a rule does but little harm, it should always be thoroughly treated and carefully watched, for its potentialities are great both as to permanent danger to health and to life itself.

Injury to the kidney, the pelvis, the ureter, or the bladder in automobile and railroad accidents, are of increasing frequency. Many times a person will be struck by an auto or thrown from one and receive an injury in the lumbar region that seems to be of minor importance at the time, but later develops a pyelitis, a pyelo-nephritis, or a peri-nephritis of dangerous character. These cases should be most carefully watched and treatment promptly instituted. We must not let the appearance of trivial injury deceive us into a false sense of security.

Much stress has been placed for many years upon the differential diagnosis between pyelitis or pyelo-nephritis and appendicitis, but little has been said of their occurrence together. I have observed a number of cases in which acute pyelitis occurred in conjunction with acute appendicitis, and a much greater number in which a chronic inflammatory condition of both organs occurred. It is a fact, too often forgotten, that an inflammatory condition about the caecum has direct access to the kidney region through the lymphatic distribution. Let us not be misled by the finding of pus and bacteria in the urine into overlooking a diseased appendix. A most interesting fact in this connection is that relief of the appendiceal condition, that is, removal of the diseased appendix, renders the urinary condition very susceptible to treatment, whereas treatment of the urinary condition without removal of the focus of infection is useless.

Any condition that obstructs the flow of urine predisposes that part of the urinary system above the obstruction to infection, with pus formation. A stone lying in the pelvis may result in rapid destruction of the kidney. A movable kidney with kinking of the ureter may also result in kidney destruction, as may a stone impacted in the ureter or a ureteral stricture. Diseases of the central nervous system may be accompanied by pyuria and must be differentiated from mechanical obstruction.

An enlarged prostate, a stone impacted in the urethra, a urethral polypus, a urethral stricture, or any other condition which retards the free emptying of the bladder may result in a severe destructive process to both kidneys, first causing disease and dilatation of the bladder, then of the ureters, finally of the pelvis and the kidneys. The development of serious conditions may be so gradual as to reach the incurable stage before they are recognized. As to treatment, the first step is to remove the cause if possible. However it is often impossible to remove the cause promptly because of the general condition of the patient and the condition of the urinary organs. If the kidneys are badly crippled because of obstruction it is necessary to drain above the obstruction in many cases, for instance in stricture or in enlarged prostate a cystotomy preliminary to more radical procedure is often mandatory to save life. After the patient is in better general condition and the kidneys are functioning in a satisfactory manner it is possible to carry out a more radical and curative procedure. It has been my observation that a cystotomy under local anaesthetic with the resulting rest of the urethra will often so relieve a previously resistant stricture as to make it easily dilatable and readily curable. The same thing occasionally occurs in enlarged and inflamed prostates, but it is unwise to depend upon such relief as there is usually a prompt recurrence of the trouble. Occasionally though, we find an old man who is so much relieved by cystotomy that he refuses further operative procedure after his bladder wound is closed, and lives a long time without serious trouble. Even a tight meatus may cause serious trouble. Stricture of the urethra in women is not uncommon and is too often overlooked. This condition is more often congenital than acquired.

Diverticulum of the bladder is a rather frequent cause of pyuria because of the restricted drainage of the diverticulum. Some years ago I reported a case of diverticulum of the bladder in an old lady with diabetes whose bladder had become infected with yeast organisms causing her much distress.

Obstructions of the ureter must be treated according to the cause, stones may have to be removed by incision, though often they can be manipulated out by the use of the cystoscope and the ureteral catheter with injections of sterile oil, if low. Stones in the upper ureter, pelvis, and kidney must be removed by incision. About the only justification for the attempt to fix a movable kidney is the fact that it is endangering the integrity of the kidney by kinking the ureter. Ureteral strictures, either congenital or acquired. must be dilated by ureteral sounds. If the kidney is hopelessly diseased, through tuberculosis, malignancy, pyelo-nephritis, stone, hydro-nephrosis, or other cause, and the other kidney gives evidence of its ability to continue to carry on the body functions, it must be removed. The removal of a vital organ is not good surgery so long as it can be avoided and it is necessary in this case to be absolutely certain of the functioning power of the remaining kidney.

As stated early in this paper, the diagnosis of pus in the urine is easily and readily made, but the diagnosis of the origin of that pus and the pathological condition underlying its presence may, and sometimes does, defy our utmost efforts. To succeed we must often bring to our aid every possible resource; a thorough physical examination; the exploration of the entire tract with instruments, as the urethral sound, the urethroscope, the cystoscope, and the ureteral catheter; kidney function tests; the X-ray; each and all play their parts and must be used if success be the result of our efforts.

In treatment, we must meet the underlying conditions, using great care to do every thing that is necessary but pursuing a true conservatism in that we do nothing that will expose our patient to unnecessary danger, for the urinary tract is treacherous territory and ill-advised procedure may turn the tide against our patient. Clear thinking, accurate knowledge, careful manipulation, and the most scrupulous cleanliness are the absolute pre-requisites of success in the handling of all cases of pyuria.

In this discussion I have not attempted to be original, nor have I desired to recount all the factors in pyuria, but I have attempted to call attention to some of the conditions that I consider most common in our practice and to mention some of the pitfalls into which I myself have fallen.

DISCUSSION

E. S. WEGNER., M. D., (York): In this paper, in calling attention to the etiology of pyuria, there is one point which was not mentioned which I think deserves consideration.

Dr. —————— of Boston called our attention some years ago to the fact that nose and throat infections are factors in pyuria. I believe he does not differentiate between pyuria and pyelitis in making that statement. In watching a series of common colds in his practice, he found 85 per cent of children had pus in the urine.

We have watched our kiddies more closely since hearing that statement, and we find a great percentage of them which show pus in the urine on microscopic examination during the course of common colds. In watching them over a period of time, we have found some of them did not clear up so quickly. They continued for weeks and months to show pus in the urine.

DR. YOUNG, (closing): The first point brought out was in regard to head colds. I think I mentioned focal infection of the respiratory passages; at least, I had that in the first draft of the paper. They are very potent factors in the causation of pyuria.

Pyuria may occur, of course, in the course of any of the infectious diseases: scarlet fever, measles, typhoid fever, pneumonia, etc. Any disease in which the blood stream is infected and in which the organism occurs in the blood stream will necessarily cause pyuria, because a great many organisms are excreted through the kidneys. But these conditions may not persist. It is not uncommon to find typhoid organisms for a considerable time after the occurrence of the typhoid fever; and some cases will often subsequently clear up without any treatment. That holds in scarlet fever, particularly. I have time and again found during the course of scarlet fever cases, on microscopic examination, the presence of various organisms—streptococci, Staphylococci, and various types of organisms.

I do not want the membership to think I tried to cover either all the etiology or treatment of these conditions in this paper. The idea was to hit the high spots and call attention to more frequent conditions.

A SIMPLE METHOD OF CAUTERIZATION OF THE CERVIX

Samuel F. Abrams, St. Louis (Journal A. M. A., Aug. 8, 1925), asserts that the cautery method of treatment is the method of choice in lacerations and inflammatory cervical lesions. The method described is simple, efficient and universally accessible. The results, with the method properly applied, are excellent. There is no cervical dystocia following its use.

CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS*

J. A. Henske, M. D., Omaha, Nebr.

The object in presenting this paper is to call attention to a mechanical obstruction and the pathological condition of the pylorus which occurs in infants. First, because it can be diagnosed; and second, because when recognized it is amenable to treatment in the majority of cases. The definition of Richter in Abt's Encyclopedia is very comprehensive and covers the condition as follows: "Congenital hypertrophic stenosis of the pylorus is a mechanical obstruction of the alimentary tract, due to a simple hypertrophy and hyperplasia of the circular muscle fibers of the pylorus, of congenital origin, manifesting itself soon after birth by all of the usual symptoms of intestinal tract obstruction, modified by the location of the lesion".

The history of pyloric stenosis the writer covered in a previous paper published in the Nebraska State Medical Journal, April 25, 1922, but it is interesting to note that up to 1905, according to Dr. Sauer, only 120 cases had been reported. Since that date the literature has been voluminous and the late Dr. L. Emmett Holt in 1917 reported 141 cases in his personal experience. The number of cases reported in recent years is evidence that this condition had not previously been recognized. The cause of the persistent vomiting was not ascertained. The symptoms were attributed to food, indigestion, gastritis, pernicious vomiting, rather than to mechanical obstruction. The cases seen late were called marasmus, athrepsia and dehydration. Indeed, the late cases are marasmic and dehydrated as the cause of starvation.

Dr. H. M. McClanahan reported his first case and postmortem findings of pyloric stenosis in 1908 in the September issue of the Medical Herald of St. Joseph, Mo., and stated that the number of cases diagnosed as pernicious and persistent vomiting prior to this date and during his long experience and practice were probably cases of congenital hypertrophic pyloric stenosis. From 1908 to 1919 Dr. McClanahan had seen a total number of 14 cases of pyloric stenosis. Of the 14 cases one was not operated on and died, and of the other 13 cases the mortality was 55%. From 1919 to the present time the diagnosis of pyloric stenosis was made in 46 cases. The Rammstedt operation was performed in 34 cases, 28 recoveries and 6 deaths, a mortality of 21.12%. Twelve cases placed upon thick gruel feeding, 9 cases recovered, one died and two passed from under our observation. A number of operative cases were placed on thick gruel and failing to make satisfactory gain, operation was advised.

ETIOLOGY

Pyloric stenosis occurs much more frequently in males than females. In our experience it was about 4 to 1. The stomach secretions have usually been normal. Practically all of the babies are breast fed and apparently otherwise healthy. Cautley's recognition of it in the 7th month of foetal life undoubtedly verifies the possibility of its congenital development. The pathologic picture has presented remarkable uniformity. The essential lesion is a hypertrophy and hyperplasia of the circular muscular fibers of the pylorus. The pylorus appears as a hard, firm, rounded or olive shaped tumor mass, covered with a normal glistening peritoneum and sharply demarcated from the distended stomach from above to the empty duodenum beyond. It has the firmness of fibrous or cartilaginous tissue. It is freely movable, with no peritoneal adhesions. The longitudinal section presents a dense, firm, uniform structure down to the mucosa. When the mucosa is freed from the constriction of the tumor mass, it appears to be normal.

SYMPTOMS

The first symptom which usually presents itself between the second and fourth week, occasionally earlier, but as a rule not later than the sixth week, is vomiting. At first the child vomits or spits up two or three times a day. The character of the vomiting gradually increases in severity, depending entirely upon the amount of constriction of the pyloric opening. The vomiting becomes more projectile in type and more frequent each day. In a simple pyloric spasm there is an absence of vomiting for a period of time but in true pyloric stenosis the vomiting is persistent. In a partial stenosis a certain amount of milk will pass into the small intestine. The loss of weight and dehydration will not be as rapid and there will be milk in the stools. In a complete stenosis there will be rapid dehydration, starvation stool, constipation, lessened amount of urine; all of these symptoms due to the inability of retaining fluids. In nature's effort to empty the stomach there is hypertrophy and dilatation of the stomach and the peristaltic waves become increased. Due to the loss of weight and dehydration the abdominal wall is very thin and the waves can be seen crossing the upper abdomen from left to right, and as their size and frequency is increased by the giving of food or water they can readily be seen from a distance after feeding. In our experience it has been possible to palpate the tumor of the pylorus in practically all of the cases as a freely movable solid tumor lying between the umbilicus and the right costal arch. In our experience the best success in palpating the tumor is when the child is made comfortable by giving it a bottle of water or food to control the crying and relax the abdominal muscles. It is necessary to use warm fingers and gentleness. Fever is absent in all cases unless the dehydration is so severe as to cause an inanition fever. In three of our cases a temperature ranging from 103 to 105 degrees was present at the first examination and the administration of intra-peritoneal normal saline gave immediate relief, demonstrating that the temperature was due to loss of fluids. The severity of all symptoms depends entirely upon the amount of obstruction. If we keep in view the pathological condition causing the obstruction it is not difficult to determine whether or not we have a complete or a partial closure of the pylorus. Roentgenographic examination was deemed unnecessary as an aid in diagnosis.

---

*Read before the Omaha-Douglas County Medical Society, April 14, 1925.

TREATMENT

The treatment recommended will depend entirely upon the condition of the infant. In cases seen before any great loss of weight the thick gruel feeding should be tried. In cases in which the weight of the child is 25% less than normal we advise operation without delay. There is no question but that thick gruel feeding is successful in a number of cases. This treatment was first introduced by Dr. L. W. Saurer of Chicago in 1918. In 1919 Dr. Langley Porter of San Francisco recommended the same line of treatment. The objections to the treatment in our experience are, first, failure to carry out the necessary details; second, the slow gain; third, parents become discouraged and abandon treatment; fourth, change physicians for further experiments; fifth, danger of sudden high fever due to starch indigestion. Intelligent care is necessary to every detail. As to the preparation and the administration of the thick gruel feeding, it is thoroughly covered in Dr. Sauerer and Dr. Porter's articles.

PRE-OPERATIVE PREPARATION

The pre-operative preparation consists of combating dehydration by using the intraperitoneal method of administration of the physiological normal saline solution. The infant should be well wrapped in a blanket to protect all loss of heat. The operating table should be warm or a hot water bottle should be placed under the child's body and ether anesthetic is to be preferred.

The operation of choice is the Fredet-Rammstedt operation. The advantages of this operation are as follows: The short duration, less traumatism, less exposure of the viscera and lastly satisfactory results. The possible dangers are hemorrhage, perforation of the mucous membrane, and failure to separate all the circular fibers. These, however, are matters of surgical technique. The duration of the operation is from four and one-half to twenty minutes. One surgeon has recently completed it in four and one-half minutes. We are satisfied there is a distinct advantage in instilling into the peritoneal cavity, just at the close of the operation, from 300 to 500 cc. of a warm saline solution. In some of the cases this has been a life saving procedure.

POST-OPERATIVE CARE

The post-operative care we feel is as important as the operation. When the infant is placed in bed it should be wrapped in a blanket with a warm water bottle to its feet. After resting one-half to one hour we then have it raised to a semi-recumbent posture and begin feeding, giving 1 ounce of 5% glucose every hour. If this is retained after the third hour the glucose is alternated with one ounce of ½ strength mother's milk or modified cow's milk. After 12 hours the feedings are given every 2 hours of 2 ounces of mother's milk or of modified cow's milk, glucose solution given ad libitum. At the end of 36 hours the child is placed upon the 3 hour schedule and given as much of the breast milk as it will take or 3 ounces of modified cow's milk. Many cases can be placed at the breast at this time, or the bottle, if modified cow's milk is used. Prior to this time the liquids are given with a medicine dropper. A number of the cases leave the hospital at the end of the fifth day. The successful operative cases from the time of the discharge from the hospital make the usual normal gain in weight and at the end of the first year of life they weigh as much and in some instances more than the normal baby. In our communications and observations of cases that have been operated on and have since attained the age of three or more years we have found that they have progressed normally and have had no apparent set back due to this condition.

DISCUSSION

DR. CLYDE MOORE: Dr. Henske covered this subject so thoroughly that there is really not much room for discussion. There are a few points I might enlarge on. The first point is the hereditary character of this disease. There are a number of cases reported in which 2 or more in the same family have developed this disease. I have one family where there is pyloric stenosis in twins. These are the ones that Dr. Davis reported not long ago in the Journal A. M. A. In regard to the diagnosis, in complete stenosis where there is projectile vomiting, mucous stools, etc., the diagnosis is easy but in partial stenosis it is a little more difficult to diagnose as it may be confused with pyloric spasm.

Another point is the uselessness of the x-ray examination in these cases. That is because sometimes bismuth meal will go through cases of almost complete stenosis. The use of adrenalin is helpful in differentiating between spasm and stenosis. Atropin does seem to help in cases of pyloric spasm.

If the child comes to operation the Rammstedt is the one to perform. It is easy to perform for the surgeon fairly familiar with infant surgery. There is very little shock and the patient usually comes along very well.

Delay in diagnosis may cause patient to be marasmic before operation is attempted. Normal salt immediately after the operation is often a life saving procedure.

DR. H. B. HAMILTON: There has been so much written about this lately that we are apt to think it is a late development. This, however, is not the case. Armstrong, in London, wrote about it 150 years ago. There was not much more attention paid to it until 1851 when one or 2 cases were reported. One year later Hirschsprung and Burdsley reported cases and little more attention was paid to it until 1905 and 1908 when Abrahams reported 400 cases in a very short time.

Dr. Henske has covered the field so well there is not much more to say. Outside of surgery there are 3 measures which are of any value. One is the use of atropin, second, washing of stomach and third, thick gruel feeding. Still, of London, reports good results with the washing of the stomach alone. Personally I think if physiological salt solution is given a few hours before the operation the reaction is slight and prevents dehydration which is so likely to occur. Babies who have been stillborn have been found to have congenital stenosis or hypertrophy of the pylorus. Usually this does not become evident until after the first few days of life. 75% of cases are detected in the first 3 weeks. It is believed that in the development of the baby some of the acid cells have been carried over to the duodenal side of the pylorus.

DR. FLOYD CLARKE: I wish to say a few words about thick gruel feeding. It seems to me the success of thick gruel feeding depends entirely on the amount of stenosis which is present. If you are unable to pass a probe through you will be unable to pass gruel. In those cases where the stenosis is not so marked thick gruel will be helpful.

DR. C. R. KENNEDY: I have operated on 18 of these cases with 2 deaths and 16 recoveries. Of the 2 deaths one was marasmic before operation and the other was probably due to lack of cooperation between surgeon and pediatrician. I think if the pediatrician cannot get food through whether it is a spasm or a stenosis the surgeon should be called in. The surgeon should get in and then close the abdomen as quickly as possible. It can always be done in from 15 to 20 minutes. If the baby is kept warm there is no shock and usually only slight reaction. Covering with omentum is sometimes recommended. I have never found the omentum very thick, it is thin and about the strength of toilet paper and I do not think it of value. I think results depend entirely on cooperation of surgeon and pediatrician, early operation, rapid operation with as little shock as possible.

Conclusion by Dr. Henske: Dr. Kennedy has operated 12 cases for us without a death. In regard to heredity: We have a family in Council Bluffs in which there are three cases of pyloric stenosis. In regard to gruel feeding: In cases where there is partial constriction or partial closure and no apparent loss of weight we try gruel feeding. If we do not have the cooperation of the mother in administering the feedings and the child does not improve, we advise operation.

TREATMENT OF HEMORRHOIDS BY SUBMUCOUS INJECTIONS OF CHEMICALS

In experimenting with various chemicals, such as carbolic acid, quinine and urea, iron perchloride, ergot, lead acetate, alcohol and formalin, Anderson (British Med. Jour., July 19, 1924) maintains that carbolic acid is the best of all though quinine and urea give almost as good results. For the past few years he has confined himself to the use of carbolic acid and he believes that 10 per cent carbolic acid in equal parts of glycerine and distilled water is the best solution to use. With this solution, injected at the proper site, the best and safest results are obtained, and no complications such as pain, hemorrhage, sloughing, ulceration, and abscess formation should occur.

TRAUMATIC LACERATION OF LUNG WITHOUT INJURY TO THE PARIETAL PLEURA: REPORT OF A CASE

Earl A. Connolly, M. D., Omaha, Nebraska

That the lungs may sustain serious injury without injury to the parietal pleura is a well known fact. Nevertheless, the rarity of this condition prompts this report.

In a review of the literature at my disposal, there are sixteen cases cited, none of which correspond with this particular case in the lack of physical signs and post mortem findings.

Protocol: J. L., white, American, baker, forty-five years of age, was admitted to St. Joseph's Hospital on October 17th, 1923.

Past History: Revealed nothing of importance save influenza and tonsillitis.

Present History: Patient was struck by a street car and thrown to the pavement. He complained of severe pain in the back and at the base of the right lung, which was exaggerated by deep inspiration.

Examination: Patient was conscious, but did not remember the accident. His temperature was subnormal; pulse eighty-six; and respiration twenty-two. There was bleeding from the left ear; contusions of the right side of the head and of the chest; and a complete transverse fracture through the middle of the ramus of the right mandible. There was no subcutaneous emphysema, no hemoptysis, nor pneumothorax. There was a pleural friction rub; and some moist rales were heard at the base of the right lung. A urinalysis, with Fehling's solution, gave a reduction of sugar on the first drop. It was thought this might be due to the head injury. Upon inquiry, a history of diabetes was obtained. The patient stated that an application for insurance, six years previous to time of injury, had been rejected because of sugar being found in the urine. He has never received treatment for diabetes.

Working Diagnosis: Fracture through the middle of the ramus of the right mandible; Diabetes Mellitus; Pleurisy with Effusion; Basal Skull Fracture.

Treatment: Under dietetic management and the administration of insulin, by Dr. Maurice Howard, the glycosuria was reduced from a reduction on the first drop to a reduction on the thirtieth drop—November 7, 1923—date of death.

Ice caps were applied to the head and morphine given for restlessness. The fracture of the mandible was reduced and was retained in good position.

October 20, 1923, at 11:00 p. m., he complained of a "jumping heart." His temperature, pulse, and respiration changed from 100—104—24 to 100—180—30. Digalen mm fifteen was given intravenously and morphine grain one-fourth subcutaneously. He became irrational during the night, and remained so until death, November 7, 1923. The temperature, pulse, and respiration ranged from 100.4—120—28 to 97—60—24 Upon diagnosis of oedema of the brain, a spinal puncture was resorted to, but without relief.

Post Mortem: Autopsy No. 345, 11-8-23. Performed by Dr. B. C. Russum. Clinical Diagnosis: Fractured skull; Diabetes. Extract of most important findings at autopsy: "External Examination: No external evidence of injury to skull or scalp. Recent bruise of the skin of the right malar bone. Recent bruise over posterior surface of the right shoulder. Hemorrhage into sclera of right eye. Interrupted continuity of upper portion of the right mandible. Well developed thorax and acute subcostal angle. Recent spinal puncture mark. Internal examination: Fibrous adhesions between outer surface ascending colon and abdominal wall and between lower and transverse colon. Right thorax filled with blood, the clots having settled into the dependent portion. Recent fracture of the third, fourth, fifth, sixth, and seventh ribs, on a line beginning at the third anterior axillary line and running diagonally downward and backward, involving each successive rib in its course. The parietal pleura over these ribs is intact, while the lung is adherent by easily broken fibrous adhesions over the site of the fracture of the sixth rib. There is a long laceration of the lower lobe of this lung, extending horizontally from the outer surface about 5 cm toward the mediastinum, at a level midway between its apex and base. The lung is collapsed and bound to the diaphragm by fibrinous bands. The other lung and pleural cavity are essentially unchanged. The pancreas is small; and there is fatty infiltration between the lobules.

Head: Increased fluid beneath leptomeninges; swollen, edematous brain; linear fracture at base of skull, beginning in petrous portion of left temporal bone, running along posterior surface of middle fossa inward and into the left sphenoidal sinus. There is fresh blood in the left middle ear. A probe can be introduced directly into it through the left external auditory meatus without meeting any obstruction. The left sphenoidal sinus is filled with blood.

Anatomic Diagnosis: Haemothorax, right, with laceration of right lung, lower lobe. Fracture of third, fourth, fifth, sixth, and seventh ribs, right. Fractured skull, basal. Fractured mandible, right. Atrophy and fatty infiltration of pancreas. Cholecystitis, chronic. Pericholecystitis, chronic. Pericolitis, fibrous. Pleuritis, localized, fibrous, right. Hemorrhage into right sclera. Bruise over right malar bone and posterior surface of right shoulder. Spinal puncture mark.

Microscopical Diagnosis. Lung: Lower lobe, right, atelectasis; coal dust pigmentation; passive congestion. Peribronchial lymph nodes, coal dust pigmentation; lymphadentis; fibrous, slight. Myocardium, myocarditis, toxic, chronic. Pancreas, fibrosis and hyalinization of islands of Langherhans; slight fibrous pancreatitis. Spleen — unchanged. Liver — slight chronic interstital hepatitis. Brain-edema. Kidney — unchanged."

Conclusions: In this case with a laceration of the entire lobe of the lung, the special symptoms of pulmonary involvement; hemoptysis, hemothorax, and subcutaneous emphysema, were absent, with the exception of hemothorax—and this was not known before death. However, the lungs may be penetrated without any of these symptoms, and the presence of any one is not pathognomonic of lung injury.

It is my belief that subsequent to his influenza there was a fibrous pleuritis extending from the parietal to the visceral pleura; and that due to the trauma the lung was suddenly collapsed, causing it to tear at the sight of the attachment, which in this case was extensive. It is also possible that receiving a sudden violent injury at the height of inspiration, the lung could burst as other viscera.

THE PRESIDENT-ELECT

The election of Dr. Wendell Christopher Phillips of New York to the presidency of the American Medical Association is a recognition of many years of service to organized medicine and of seven years of exceptional service as a trustee. During his trusteeship, Dr. Phillips was for part of the time chairman of the board, and for several years a member of the Executive Committee. In addition to attending the regular sessions of the board, he journeyed from New York to Chicago each month, giving several days of his time to the business of the association. He was also a member of the House of Delegates of the Association for six years, 1912-1917. Dr. Phillips was born in Hammond, N. Y., June 9, 1859. He is the son of Samuel and Mary (Merrill) Phillips, was educated at Potsdam (N. Y.) Normal School, 1876-1879, and received his degree in medicine from the University Medical College of New York University in 1882. He devoted himself promptly to diseases of the ear, nose and throat, becoming consulting aural surgeon to the New York Postgraduate and Flushing hospitals, and aural surgeon to the Manhattan Eye and Ear Hospital. Dr. Phillips is a member of the American and of the New York otolaryngologic societies, and was president of the American Laryngological, Rhinological and Otological Society in 1907. He is also a member of the New York Academy of Medicine, and was president of the Medical Society of the State of New York in 1912. He has contributed widely to the subject of otology in medical literature, including a book, "Diseases of the Ear, Nose and Throat, Medical and Surgical", which is used as a text-book in many leading medical colleges. The social mindedness of Dr. Phillips is indicated by the fact that he was instrumental in organizing the American Federation of Organizations for the Hard of Hearing, which has done much for promoting the study of lip reading by the deaf and in making easier their lot. The personal popularity of Dr. Phillips and his recognized ability as a worker and organizer in scientific medicine indicate that great advancement may be expected during his leadership of the American Medical Association. — Jour. A. M. A., June 6, 1925.

BLOOD PRESSURE CHANGES ACCOMPANYING CORONARY OCCLUSION

In the absence of hemorrhage, shock, infectious disease and excessive toxic or metabolic disturbance, such as diabetic coma, and with the presence or history of severe pain of cardiac origin or distribution, Leslie T. Gager, New York (Journal A. M. A.. June 6, 1925), says that the fall in arterial tension will commonly be due to acute myocardial insufficiency on the basis of coronary occlusion. Four cases are cited to show the value of a series of blood pressure readings, when coronary thrombosis is in question. Gager further says that: The recognition of a sudden fall in blood pressure, following an attack of severe cardiac pain, derives its importance from the fact that coronary occlusion brings about this state of hypotension by striking directly at the cardiac output. Following the thrombus formation, or the lodgment in an embolus, in a coronary artery, there occur (1) infarction of the heart muscle to a degree corresponding with the site of obstruction, and (2) impairment or loss of ventricular function according to the area and extent of the infarction. Since the left coronary artery, or its branches, is commonly involved, it is usually the greater circulation that offers the evidence of cardiac failure. In the milder instances of occlusion, or in cases in which the left ventricle escapes, little or no variation in peripheral arterial tension may occur. It is Gager's contention, however, that blood pressure readings, taken daily or even oftener, form an important detail in establishing the diagnosis of coronary occlusion. It is a method of observation at the command of every practitioner. A sudden fall in arterial tension, following severe cardiac pain, rests on the physiologic basis of infarction and myocardinal insufficiency following an occlusion.

REMOVAL OF FOREIGN BODIES FROM THE EXTERNAL EAR

Dixon removed a cherry-stone which had been in a child's ear for ten months, by means of dentist's cement, which sets quickly. He introduced this into the ear by means of a brush till it touched the stone and, after it had hardened, the stone with the adherent brush was easily extracted. (Journ. of Amer. Med. Assoc.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
1012 Terminal Building, Lincoln, Nebraska.

F. A. Long, M. D., Editor.................Madison, Neb.
R. B. Adams, M. D., Associate and Business Manager.............................Lincoln, Neb.
1012 Terminal Building, Lincoln, Neb. Tele. B2625.

COMMITTEE ON JOURNAL AND PUBLICATION.
F. A. Long, Chairman.......................Madison
W. O. Bridges.................................Omaha
B. F. Bailey.....................................Lincoln
R. B. Adams, Ex officio.....................Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewritten, double-spaced, not the carbon, submitted.

Reprints should be ordered from the printer, The Huse Publishing Co., Norfolk, Neb.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. X September No. 9

THE OFFICE OF THE JOURNAL AND SECRETARY MOVES

On and after September first, 1925, the business office of the Nebraska State Medical Journal and the office of the secretary of the Nebraska State Medical Association will be found in the McKinley Building, Lincoln, Nebraska.

A GLIMPSE OF BRITISH MEDICINE

An overseas trip undertaken primarily for travel afforded slight opportunity for observation of matters interesting to the medical profession. Personal contacts and visits were made at the University of Edinburgh and the Royal Infirmary and at St. Thomas' hospital, London.

Great Britain has a good many students from the Orient and from the Colonies. Chinese, Japanese, Hindoo and other dark races, of both sexes, were noted as students.

The entrance requirements at Edinburgh, it was explained, are rather liberally construed. The equivalent of an A. M., or B. S. degree is required. There are 1,400 students. Two years are devoted to anatomy and physiology and three years to medicine, and the practical application is stressed.

In a lecture to the student body on Carcinoma of the Rectum, Professor John Fraser referred in favorable terms to the treatment by low degree heat "originated by an American surgeon named Percy," which rather pleased the writer. Several abdominal operations were witnessed at the Royal Infirmary. Green drapes are used in the operating rooms because the color is thought to be more restful to the eyes. The Royal Infirmary has 900 beds and affords wonderful opportunities for medical study.

St. Thomas' hospital, London, dates back to the twelfth century and was named after Thomas a-Becket. The present plant contains 632 beds. The writer saw Sir Cuthbert Wallace do a gall-bladder drainage and a gastroenterostomy in an endeavor to lengthen the life of the patient suffering from carcinoma of pylorus and contiguous structures.

While not strictly modern in all respects these hospitals are well planned, well equipped and wonderfully well conducted.

It is claimed that there is no fee splitting in Scotland and it is said rather softly that it is a bit different in England.

The antivaccinationists continue active in Great Britain as evidenced by discussions in the lay press. The problem of long or shorter hours for nurses is the same problem as we have in America. Pure food regulations are discussed by the lay press and of particular note was a propaganda to protect with covers, cooked meats.

Some social problems of interest to the medical profession, such as the present day problem of the young people, is uppermost there, as well as here. Divorces are abundant. British papers teem with divorce proceedings based on adultery, abandonment, non-support, etc. Even reckless driving is not alone an American problem.

SOLVING THE CANCER PROBLEM

The London Lancet recently appeared with articles by Dr. W. E. Gye and J. E. Barnard, English research worker, aggregating thirty pages describing their work in search for the cause of cancer. The lay press has heralded their discoveries as positive proof that the "germ" of cancer has been discovered. Briefly, Barnhard has invented an ultra-microscope and Gye has brought forth a filterable virus visible by the ultra-microscope which when injected into fowls under suitable conditions produces some sort of growth. Probably their work is a real contribution to the study of cancer; but it is not believed by research workers in this country that the "germ" of cancer has been discovered; on the other hand the concensus of opinion in this country still seems to be that cancer is not a germ disease.

SOME ERRONEOUS NOTIONS

The "Monkey Trial" at Dayton, Tennessee, has produced a veritable flood of nonsense about evolution. There are at least four erroneous notions popularly held, and it is time they were straightened out.

Evolutionists do not claim and have never claimed, that men descended from apes. What they do hold is that man and apes descended from original ancestors. Charles Darwin—his remains are buried in Westminster Abbey, London—was not the originator of the theory of evolution. Similar theories were held by ancient Greeks. Strictly speaking, the theory known as the "Darwinian theory," is that evolution is brought about by the survival of the fittest. It should also be remembered that Darwin's theory is not universally accepted by science. Further, evolution cannot be scientifically proven. It still remains merely a theory. Strong circumstantial evidence, however, leads the majority of the world's outstanding scientists to believe it is true.

INTERSTATE CLINIC TOUR

The value of the recent Interstate Clinical Tour through Canada, British Isles and France is realized when certain factors are taken into consideration.

First—Daily contact with members of the profession representing forty-seven states of the U. S. A. and practically all of the Provinces of Canada.

Second—Days aboard ship in which scientific papers were read and discussed.

Third—Specially prepared clinics and lectures at prominent medical centers, the scientific value of which can hardly be estimated. For example: In London the mornings were spent in general assembly, addresses by men prominent in the profession and by public officials of the highest rank including Duke of York, Minister of Health, U. S. Ambassador Mr. Houghton and others. Thus the meetings took an international character, expressing the traditional friendship of the two countries. Afternoons were devoted strictly to clinical work especially adapted to each medical group.

Fourth—Social features of varied and unusual interest. Addresses at the banquets and at the large receptions were made by very prominent and leading representatives of the countries visited. An opportunity was thus afforded of meeting such men as the Duke of Connaught, Sir Arbuthnot Lane, Baron Bland-Sutton, Austin Chamberlain, Wm. T. Cosgrave (President of the Irish Free State), Lord Glenavy, Gaston Doumergue (President of France) and others.

Fifth—Travel. Sightseeing was not neglected but was secondary to the main objects of the tour. The wives and children of the members naturally profited more from the sightseeing features, but all enjoyed the trip to the Shakespearean country, the Trossachs, the English Lakes, to Versailles in France, as well as special trips in Ireland.

The opportunities and benefits enumerated above, could not be obtained by an individual or a small group in the same length of time. For a representative assembly of such unusual members every effort was made at each medical center to provide the best of clinics and social events.

—J. A. Henske.

GROUP PRACTICE

What is your opinion of group practice? Is group practice practical? Does group practice serve the best interests of the public?

The above queries were incorporated in the questionnaire submitted to the members of the Nebraska State Medical Association. The replies present a sharp divergence of opinion. With few exceptions the sentiment was in favor of group practice when properly conducted but it was the concensus of opinion that practice is not practical in rural districts where the family doctor should be and will be supreme.

Let us first hear from men who are engaged in group practice. Says one: "I am a group man and have been for ten years. Group practice often requires self-denial and diplomacy. Not all doctors can qualify, largely because they are so tempermental as a class. I think group practice serves the best interests of the public, but the personal element is an ever-present factor. The moral, ethical and educational standards for positions in a group must be the same as for individual practitioners." Another writes: "Group practice is the ideal way for one to practice. It is practical and it serves the best interests of the public. There is about one-third of the practice which needs the services of a group. Group practice does not, and never will, replace general practice. Two-thirds of our physicians will remain in general practice." And again: "Group practice is ideal. After three years of association in a group practice, I consider it nothing else than practical. It permits each man to crystallize his study and practice along definite channels. Further, it is of tremendous economic value to the patient. It expedites the matter of equipment, and makes available to the group the latest and best laboratory and x-ray diagnostics". "I like it," says another. "It is practical as we have demonstrated it for three and one-half years. We believe we can do better work and that assures better service to the public." Finally one of our outstanding proponents of group practice has this to say: "I practice group medicine. No surgeon can serve the people without a diagnostic group. It's the paramount issue today from the patient's standpoint."

There are many who endorse group practice without ever being connected with a group. This we read: "Group Medicine is by far the most satisfactory way to practice medicine. Group practice is only practical in large centers where there is sufficient work for at least one man qualified in each of the various specialties. Smaller communities do not as a rule see a sufficient number of cases in the minor specialties to make it worth while for a man having such training. A group serves the best interests of the public because the patient may receive a very detailed examination and opinions of experts in the various specialties without additional cost and a very definite diagnosis can be made before any form of treatment is instituted."

Many and varied are the criticisms of group practice. Says one: "Group practice has its good points and its bad points. It is quiet practical—but the tendency is for men who have not sufficient training to get into groups, not from an altruistic standpoint, but because they feel that fees will be larger and work lighter. To a certain degree group practice serves the interests of the public providing the men composing the group are well-trained in the special line they are following and make service the keynote of the group." Another avers that "group practice is only practical when the work of the group is checked, correlated and directed by a broad-visioned, capable, matured executive medical man. These factors missing the interest of the patient is best served by a family physician." Says one: "When a group comes up to our highest ideals of what a group practice should be, then we have created the best—the best for the doctor and the public. Too many so-called groups fail to reach this ideal and so would give better service in the old way of each man to himself." Again we read: "Group practice is a method of elimination of all who are not able to enter a group. It is a monopoly in medicine; it is practical for the group." "Group practice has done more to foster the cults than anything else." "Too much like a medical trust." "Leads to fee-splitting under another name." "Increases the costs to the public by encouraging necessary, if harmless, diagnostic procedures." "Patients feel that they are being exploited and lose confidence in the profession." "Tends to develop a clique and to limit the opportunity of the outsider." "The best interest of the public is conserved by developing honest practitioners who refer cases to specialists when and only when needed." "There are few groups whose main object is not mercenary." "Too much of a machine—the human side lost sight of." "I have not been pleased with all such groups in my vicinity. Usually the patient is urged to have many tests and examinations which do not have much bearing on the case in order to make each department self-supporting in fees." "Many groups are performing a real service. When the practice seems to be that each member should get a dig at the individual patient they had better disband." "Probably less than one per cent of patients would be benefited by group service."

"Group practice requires a super-specialist to evaluate the findings of others or the patient will be seen through narrowed lenses. If there were such a specialist he wouldn't need the others. It may be argued that the conference of many minds gives the best results. True enough if the dominant mind doesn't direct the diagnostic judgment of others, or if the others are not too entirely dependent for financial returns on good standing with the chief of the clinic. If it were proven in a marked percentage of cases that the patient received greater benefit with only a proportionate increase in charges it might be admitted that the best interests of the public are served, and not, as now the best interests of the group."

In weighing the pros and cons of the controversy over group practice it is apparent that the practice of medicine by groups is not generally accepted by the medical profession as an established institution. It is still in the experimental stage. Group practice will be adjudged "practical" only when it becomes apparent that it is a success. That time has not yet arrived, with of course, a number of notable exceptions.

However great the divergence of opinion on the merits of group practice all will agree that the group cannot replace the family doctor in the home; that a successful group must be made up of men of highly specialized skill dominated and directed by a genius in leadership; that the same qualities which qualify the individual member of the profession in the art and science of medical practice must apply to group practice. There cannot be a double standard—one for the individual and another for the group.

—Palmer Findley.

MEDICAL SOCIETY OF THE MISSOURI VALLEY AT ST. JOSEPH

Plans are rapidly maturing for the annual meeting of the Medical Society of the Missouri Valley, in St. Joseph, September 30-October 1 and 2, 1925, under the presidency of Dr. J. W. Martin, of Des Moines, Iowa. The St. Joseph Clinical Society will hold a two-days session at the various hospitals on Monday and Tuesday preceding the meeting. The sessions will be held in the Crystal room of Hotel Robidoux and the exhibits will occupy both the office lobby and the mezzanine balcony.

Diagnostic clinics will occupy the morning hours, while a series of symposia, contributed by the various state universities, will fill the afternoons. The annual dinner will be given at the Robidoux on Thursday evening when speakers of national prominence will be present. A "get together" smoker will be held on Wednesday evening, when the members will be the guests of the Buchanan County Medical Society and the St. Joseph Clinical Society.

UNIVERSITY OF PENNSYLVANIA GRADUATE SCHOOL OF MEDICINE

Fellowships in Neuropsychiatry

Five fellowships in neuropsychiatry are available in the Graduate School of Medicine of the University of Pennsylvania. These fellowships have been established for the period of three years from October 12, 1925, by the Commonwealth Fund of New York.

No definite fellowship stipend has been fixed; but it will in each case approximate $2200 per annum. The precise stipend will in each case be designated by the fellowship committee.

The minimal qualifications for applicants are: (a) age, from 25 years to 35 years inclusive; (b) graduate of a Class A medical school; (c) one year's approved internship; (d) satisfactory references; (e) approval of personal and professional status.

Applications are invited for these fellowships and should be addressed to "Dean, Graduate School of Medicine, University of Pennsylvania, Philadelphia."

EDITORIAL PARAGRAPHS

In the death recently of Dr. Albert J. Ochsner, of Chicago, America has lost one of its foremost surgeons.

Dallas, Texas, is to have the next annual meeting of the American Medical Association and all the doctors of Nebraska will plan to be present.

The annual meeting of the American College of Surgeons will be held at Philadelphia October 26-30, with headquarters at the Bellevue-Stratford.

Two half grown boys, natives of the island of Bermuda, were found in Newark, N. J., afflicted with leprosy. Being British subjects they were ordered deported.

Dr. Morris Fishbein, editor of the Journal of the American Medical Association, writes a weekly syndicated letter for sixty newspapers that reach eight million people.

Sir Berkeley Moynihan is quoted as saying that the operating room is the sanctum, the patient the most important person in the operating room, the operating table the altar and the surgeon the high priest.

When we eat something we cannot digest, the indigestibility is the protest of the thing eaten against its environment, while the discomfort which we call indigestion is the counter-protest of our digestive organs against that substance. There!

After almost a lifetime the editor has succeeded in having the puzzle explained to him: In Great Britain a doctor of medicine who is a fellow of the Royal College is addressed as "Mr."Other medical men are addressed "Dr."

Giant human skeletons are reported to have been discovered in the mountains of the State of Chihuahua, Mexico, by prospecting miners. The skeletons are said to measure from ten to twelve feet, and the feet from 18 to 20 inches. This sounds rather startling.

Your editor returned from Europe the first days of August thoroughly convinced that travelling abroad takes a lot of conceit out of a man who has lived a provincial life in Nebraska. Here, we are apt to get so self-centered as to think we are the people,—but there are others.

Entirely too much sympathy is wasted on condemned murderers. The person murdered is forgotten and the condemned becomes a hero in the minds of a number of well-meaning but very silly people. If the effort expended by these people were directed toward law enforcement, it might help some.

The University of Wisconsin at Madison, has for a number of years offered two years of a medical course. Following upon the completion of the University hospital—the Wisconsin General—announcement is made that the third year of a medical course will be added beginning this fall and the fourth year will be added in 1926.

The Nebraska Department of Public Welfare, Division of Child Hygiene, is authority for the statement that Nebraska loses about 200 mothers every year, as well as 2,000 infants under one year. The Division of Child Hygiene has prepared a series of ten letters of information for expectant mothers and asks the cooperation of the profession toward educating prospective mothers about matters they should know for their own and their offspring's welfare.

In an address delivered before the Academy of Medicine, Paris, Dr. Antheaume, described keptomania as a seductive medical theory; but denounced it as a baseless legend. As a remedy he suggests that suspects should be closely followed by inspectors until they realize that they are under suspicion and that when they are detected they should be ruthlessly sentenced to imprisonment and their names be made public in the newspapers. The doctor insisted that if these methods were followed both keptomania and the theory would disappear.

The editor of the Journal of the American Medical Association says that an effort is being made to have more editorials discussing current events, medical economics and other matters of interest to the medical profession. Your editor feels like patting himself on the back after reading the above for this is what he has aimed at in Nebraska state medical journalism. There is a human interest side to medicine. Matters of general interest to the profession, aside of the strictly scientific, do have a place in state medical journalism and it is encouraging to have the head of the greatest medical journal of the world take this same viewpoint.

A LANDLUBBER'S LOG ON THE "S. S. MONTROYAL" AND HIS MUSINGS.

> "I must down to the seas—for the call of the running tide,
> Is a clear call and a wild call, that may not be denied."

Quebec, May 22—Sailed at 4:30 P. M. Two tugs pulled the boat into the channel, the huge engines began to throb and we were off down the channel of the mighty St. Lawrence. All were on deck watching the city of Quebec receding, watching both shores lined with villages and farms.

May 23—Early on deck to greet cold weather. A little snow on deck and snow on mountains on south shore. Villages still stud the south shore and fields are well outlined. The north shore has disappeared. Had first ship bath and noticed greater specific gravity and buoyance of salt water and accidentally tasted it. By noon we are approaching the Gulf of St. Lawrence and are out of sight of land. People ardently and aimlessly parade the deck—men, women, children and infants. Table guards were attached this evening; from now on it appears that one literally "goes to the trough to take his fodder."

> "Down, down, on the deep, deep sea,
> Where blue waters perpetually roll."

May 24—"A wee bit" uncertain this morning. Warmer outside, but chilly withal. Wished for fur coat, seal skin cap and high arctics. Rounded Cape Race at 6 P. M. Felt splendid all afternoon.

May 25—Sunshine and warmer today. Over the banks of Newfoundland. Iceberg to north, said to be about seven miles away. Looks as big as the largest barn. The afternoon grew stormy and much colder and ship rolled a good deal. Dishes slid all over the tables.

May 26—Ship rolled all night and sea rough this morning. Sugar bowl rolled from table. A school of dolphins came alongside this morning.

> "Roll on thou deep and dark blue ocean, roll!"

May 27—Ship rolled heavily all night and early morning. Rain and generally disagreeable outside.

> "Rocked in the cradle of the deep."

May 28—Storm, drizzling rain and heavy seas continue. Sea said to be rougher than usual. Gale all day. At dinner time ship gave a lurch, three hundred dishes broke in the dining room, one man had an arm broken, another had his scalp badly cut and an elderly lady suffered painful injuries about the hip and received a black eye.

May 29—Storm abated, sea calm, sunshine and warmer this morning. Rounding the north of Ireland and entering the Irish sea. Can see the green fields and white washed houses on shore of Ireland. Liverpool in the morning.

"And I have loved thee, Ocean!"

INTER-STATE POST GRADUATE ASSEMBLY OF AMERICA

The meeting of the above organization will be held at St. Paul, Minn., October 12-16, 1925. Diagnostic clinics will again be stressed and are to be conducted by some of the most noted men in medicine in America. Several foreign medical men will be guests of the Assembly. A cordial invitation is extended to all members of their respective state medical associations to attend these meetings.

HUMAN INTEREST TALES

Atkinson is to have a general hospital.

Dr. T. A. Peterson has located at Sumner.

Dr. W. H. Gibbons, has located at Harvard.

Dr. L. C. Bleick, Omaha, has returned from Vienna.

Dr. C. L. Davidson has moved from Crete to Craig.

Dr. B. M. Kully, Omaha, has returned from study at Vienna.

Dr. L. E. Sauer, an Omaha product, has located at Tekamah.

Dr. and Mrs. A. R. Knode, Omaha, spent a month at Lake Okoboji.

Dr. I. L. Boehr, formerly of Tecumseh, has located at Long Pine.

Dr. J. C. Tucker, Beatrice, underwent a major operation in July.

Dr. Alex. F. Hansen, Omaha, visited the Pacific Northwest during July.

Dr. Frank Kohn, formerly of Beaver City, has located at North Platte.

Dr. J. W. Thomas, Nehawka, is about to go to Europe for a year of study.

It is reported that Dr. Lucien Stark, Hartington, is about to move to Florida.

Dr. and Mrs. W. L. Dayton, Lincoln, spent the summer at Travers Bay, Mich.

Dr. A. B. Walker, Lincoln, pleaded guilty to a narcotic law violation recently.

Dr. E. C. Foote, Hastings, spent a vacation period in Colorado with his family.

Dr. Clinton Kenner has taken over the practice of Dr. G. H. Gilmore at Murray.

Dr. R. B. Adams has been appointed school physician of the Lincoln public schools.

Dr. R. T. Jones, Edgar, has gone to Vienna for six months of post graduate study.

Dr. and Mrs. Frank Conlin, Omaha, spent a part of August at Lake Mendota, Minn.

Dr. Rodney Bliss and family, Omaha, enjoyed a trip to Colorado Springs in August.

Dr. A. O. Peterson and family, Omaha, spent the month of August in the Black Hills.

Dr. A. E. Gerish and Dr. Nettie L. Gerish, Omaha, are spending a month at Estes Park.

Dr. M. B. Wilcox, Hastings, did post graduate work in Chicago during the summer.

Dr. B. A. Finkle, Lincoln, returned in early August from a motor trip through the east.

Omaha has 19 hospitals with a total of 2,000 beds, three-fourths of which are occupied daily.

Dr. Ralph W. Murray of Jansen, was fined $500 for narcotic law violation some time ago.

Dr. D. L. Anderson, Beatrice, has been in Europe since early July with a party of physicians.

Dr. and Mrs. W. J. Raynor, Grand Island, spent the summer touring and fishing in Minnesota.

Dr. R. Russel Best, Omaha, has returned from the clinics of New York, Philadelphia and Baltimore.

Dr. R. D. Balcom of Silver Creek, has made arrangements to succeed Dr. Homer Davis of Genoa.

Dr. C. P. Fall and wife, Beatrice, returned from Europe early in July. They had been with Peck's Tour.

Dr. W. L. Ross Jr., Omaha, has returned from a year of postgraduate study of urology in eastern cities.

Dr. and Mrs. J. S. Livingston, Plattsmouth, enjoyed a vacation in the Colorado mountains during the summer.

Dr. and Mrs. A. D. Dunn and a party of relatives spent the month of July at Medicine Bow Lodge, Saratoga, Wyo.

Dr. Frank L. Ready of Hartington and Miss Ruth G. Nystrom of Minneapolis were married recently at the latter place.

Dr. H. A. Wigton, Omaha, who accompanied Peck's clinical tour, and has since taken work in Vienna, has returned.

Dr. Ted E. Riddell of Omaha has become associated with Dr. N. H. Rasmussen of Scottsbluff in the practice of medicine.

Two additional units are being built to the Lincoln Methodist hospital (the William Jennings Bryan home) at a cost of $100,000.

Drs. B. M. Kully, and L. C. Bleick, Omaha, after the close of Peck's clinical tour at Paris, went to Vienna to get some special work.

An addition of 165 beds to St. Catharine's hospital, Omaha, costing a quarter of a million dollars, was opened during the summer.

Dr. W. E. Nowers and family, Kenesaw, took a vacation trip in August. Dr. N. J. Everett, Omaha, was locum tenens for Dr. Nowers.

The corner stone of the new Immanuel hospital at Omaha was laid August second. It will have 130 beds and will cost about $200,000.

The office of Dr. A. B. Scofield, Atlanta, was robbed in July, the loot consisting of morphine, hypodermic syringe, medicine cases, etc.

Dr. Edson L. Bridges, Omaha, has become head of the department of medicine, University of Nebraska, vice Dr. Leroy Crummer, retired.

The marriage of Dr. H. E. Campbell, Omaha, and Miss Mary King of Cleveland, Ohio, is announced. They will live in a mission field in China.

Dr. C. O. Robinson, of Tulsa, Okla., has purchased the equipment of the late Dr. A. V. Robinson of Beatrice and has located at the latter place.

Dr. T. F. Brennan, a Los Angeles physician who practiced in Omaha back in the eighties, visited Omaha early in July while enroute to Europe.

Dr. Emma Ackerman, a former West Point, Nebr., girl, practicing in Sioux City, was elected vice president of the Iowa Society of Medical Women this spring.

Dr. H. H. Theis, of Reading, Kan., has been appointed postoffice physician of Omaha, gaining the appointment by competitive examination over twenty Omaha physicians.

Drs. R. B. Adams, A. D. Munger and H. H. Waite, Lincoln, spent the month of August at northern Minnesota lakes luring elusive fish, and as fair prey for hungry mosquitos.

Dr. B. L. Shellhorn for many years a prominent physician of Peru, Nebr., now in the medical corps of the Army has been transferred from Honolulu to Fort H. G. Wright, N. Y.

Doctors J. C. Byers and Frank T. Hamilton, Friend, entertained a dozen neighboring physicians at a chicken dinner July 14th. Several papers were presented after the dinner.

Dr. William Lear, has located at Springview, Nebr. Dr. Lear is a Springview product and deserves commendation for deciding to serve the home community, sadly in need of real medical service.

Dr. A. S. Pinto, health commissioner of Omaha, appointed four Creighton university medical college graduates to positions in the health department. They are Drs. J. G. Vetter, C. L. Martin, J. J. O'Hearn, Frank Lovely.

Dr. Katharine H. K. Wolfe, who for the past seven years has been the very efficient school physician of Lincoln, has opened an office in Lincoln and it is understood will specialize in nutrition, undernourished children and diseases of women.

Dr. C. Edward Sayre, Norfolk, one of the ten best rifle shots in Nebraska, has been named one of a team to go to Camp Perry, Ohio, to take part in a national rifle contest. Dr. Lincoln Riley, Wisner, another noted shot, is captain of the team.

NECROLOGY

Seth W. Dodge, Fairbury, Neb.; Iowa University College of Medicine, 1882; for forty-three a practitioner in Jefferson county, the earlier years at Endicott and Reynolds, but for many years at Fairbury, died suddenly August second, aged, about 78 years. He had been active in the civic affairs of the community and had served two terms as mayor. He was intimately associated as a student in medical college with your editor and his high character as a man is cheerfully attested.

Elmer J. Updegraff, Los Angeles, Calif.; University of Nebraska College of Medicine, 1899; a well known practitioner of Omaha from time of graduation until about two years ago; formerly adjunct professor of surgery at his alma mater and for a number of years assistant to the chief surgeon of the Union Pacific R. R. died at Hollywood, Calif., July 9th of organic heart disease, aged 68 years. He was the father of Dr. Howard L. Updegraff, Omaha.

J. R. Buffington, Nelson, Nebr.; College of Physicians and Surgeons, Keokuk, Iowa, 1875; a practitioner at Liberty from 1880 to 1890 and at Nelson since 1890; at one time a member of the Nebraska Legislature; died the middle of June, aged 85 years.

Jennie Belle Rezell, Fairbury, Nebr.; University of Nebraska College of Medicine, 1924; died July 22, from an infection of the upper lip after on illness of less than one week, aged about 35 years.

James S. Foote, Omaha; Medical Department of Columbia College, 1881; for thirty years professor of bacteriology and pathology, Creighton University College of Medicine; an author on scientific subjects; one of the well known medical men of Nebraska; died June 30, of cerebral hemorrhage, aged 74 years.

Joseph Mangold, Lynch, Nebr.; University of Cologne, Germany, 1921; surgeon at the Sacred Heart hospital, Lynch, Nebr., was killed by the collision of his car with a fast train at Richland, Nebr., June 21st, aged about 33 years. Dr. Mangold had come from Germany in May, 1924, and was on his way to Lincoln to get his license to practice, (issuance of which had been somewhat delayed) when fate overtook him.

Frederick D. Haldeman,* Berkeley, Calif.; one of the first graduates of the Omaha Medical College, 1882; for about forty years in active practice at Ord, Nebr.; the first secretary of the Nebraska State Board of Health; president of the Nebraska State Medical Society, 1896-1897; resident of Berkeley, Calif., for the last few years, died of fracture of the skull, June 11th, aged 66 years.

*Efforts to get photo and data from family of deceased unfortunately have not been successful .

BOOKS RECEIVED

Practical Lectures: 1923-24 Series. Delivered under the auspices of the County of Kings, Brooklyn, N. Y. 484 pages, 132 illustrations and three color plates. $5.50. New York. Paul B. Hoeber, Inc. 1925.

New and Nonofficial Remedies, 1925, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1925. Cloth. Price, postpaid, $1.50. Pp. 461+XL. Chicago: American Medical Association, 1925.

"I want a shave," said the determined-looking man as he climbed into a chair in the Coliseum barber shop. "I don't want a haircut nor a shampoo. Neither do I want any bay rum, witch hazel, hair tonic, hot towels or face massage. I don't want the manicure girl to hold my hand nor the bootblack to fondle my feet. I just want a plain shave, with no trimmings. Do you understand that?"

"Yes, sir," said the barber. "Will you have some lather on your face, sir?"

The doctors never seem to prescribe rest and change except for those who already have the change.—Cleveland Times.

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, October, 1925 No. 10

CONTENTS

Page
Gallbladder Disease, Clayton F. Andrews, M. S., M. D., F. A. C. S. 365
The Appendico-Biliary Syndrome, Max Emmert, M. D., F. A. C. S. 370
How the Mortality May Be Reduced in Operations on the Gallbladder and Gall Ducts, John E. Summers, M. D., F. A. C. S. 373
Modern Aspects of Nutrition—The Pathology of Malnutrition. 8. Food with Reference to the Acid-Base Equilibrium—Continued. Victor E. Levine, M. A., Ph. D. 379
Some Phases of the Tuberculosis Problem, John F. Allen, M. D. 388
Radium in Urology, Everett E. Angle, M. D. 392
Why I Dispense My Own Drugs, Miles J. Breuer, M. A., M. D., F. A. C. P. 395
Bacterin Treatment of Pertussis, S. A. Swenson, B. Sc., M. D. 397
Report of a Case of Tetanus, F. P. Dorsey, Sr., M. D., and F. P. Dorsey, Jr., Assistant 400
Unusual Treatment of Ectopic Pregnancy, Miles J. Breuer, M. D. 401

EDITORIALS —

Terminal Disinfection and Fumigation 402
A Survey on Prescription Writing 402
The Consultant and the General Practitioner 402
Actual Dangers of Cultism 404
Allergic and Toxic Properties of Lens Protein 405
Editorial Paragraphs 406
American Board of Otolaryngology 407
American College of Radiology and Physiotherapy 407
Fourth Annual Physiotherapeutic Convention 407
The Societies 407
Human Interest Tales 408
Necrology 408

GALLBLADDER DISEASE*

Clayton F. Andrews, M. S., M. D., F. A. C. S., Lincoln, Nebraska.

It shall be my purpose to summarize the salient features in connection with the diagnosis and surgical treatment of diseases of the biliary apparatus. Their frequency and their importance is being recognized more and more, especially insofar as they are related to chronic ill-health, by virtue of their many complications. It is our duty to prevent, as far as is possible, the development of these chronic infective processes and their subsequent complications, by early recognition of the condition and the recommendation of appropriate treatment, be it medical or surgical.

There are certain fundamental facts in the anatomy, physiology, and pathology of the biliary apparatus that should be prominent in our minds, as they are the basis of a proper interpretation of the symptoms.

The thin walled gallbladder is made up of elastic tissue and a small amount of unstriped muscle fibre. It has a narrow, eccentrically placed outlet; a generous blood supply and lymphatic drainage, this latter being especially large, and it is now felt that an infection of the liver very often precedes that of the gallbladder, which is involved secondarily through this free lymphatic anastomosis. There is one collection of circular muscle fibres at the lower end of the common duct, known as The Sphincter of Oddi. The frequency of associated pancreatitis with biliary disease is explained largely by the free anastomosis between the lymphatics of the biliary system and the head of the pancreas, and to a lesser degree by the close relationship between the larger pancreatic duct and the common bile duct.

The nerve supply of the gallbladder is

---

*Read before the annual meeting Nebraska State Medical Association, Lincoln, May 12-14, 1925.

made up of the sympathetic fibres from the coeliac plexus corresponding to the lower six thoracic segments of the cord, fibres from the vagus, and occasionally, sensory fibres from the phrenic. These connections explain the pain and constricting sensations along the costal margins, the gastric symptoms, and the shoulder pain which is so frequently associated with gallbladder disease.

Although the secretion of bile by the liver is a continuous process, but little of this fluid passes into the duodenum between meals. It is the storage and concentration of bile during this period, and its ejection after the meal, that make up the chief functions of the gallbladder. In addition, there is a marked power of absorption, which is a menace as well as an asset, for in the presence of infection, this inspissation of the bile favors stone formation as well as poisoning of the other tissues, notably the myocardium. The ejaculation of bile is dependent, more upon outside pressure, such as respiration and other muscular movements, than upon the action of the small amount of involuntary muscle in the gallbladder wall.

It would be expected that infection would gain a foothold in the gallbladder, where stasis is present, much more often than in the ducts, and such is the case. Rosenow has shown that certain strains of streptococci infect the gallbladder wall in preference to any other tissue. It has long been known that typhoid bacilli may live in the gallbladder many years after the primary infection. Colon bacilli from the portal circulation reach the liver and find their way into this viscus through the lymphatics or through the bile. Anything that increases biliary stasis will, naturally, tend to favor infection. Hence we see that persons past middle age who are taking on weight, getting less exercise with the resultant flabby abdominal muscles, are notoriously susceptible to biliary diseases. So also, are they common in pregnancy and the puerperium, due probably to three causes: (1) increased biliary stasis, (2) increased cholesterol content of the bile and blood, and (3) constipation. The source of infection may be varied, such as appendicitis, dental and tonsillar infections, pyelitis, seminal vesiculitis, prostatitis, and so on. It is not to be assumed that infection always precedes gall stones, as a single cholesterin stone may be aseptic, although it is unlikely to remain so indefinitely. All evidence points to the fact that in the majority of instances, the reverse sequence is found, namely, infection first, followed by stone formation.

Chronic cholecystitis may persist for years without the formation of stones. In these patients the outstanding complaints are directed to the stomach. Qualitative dyspepsia is marked, greases, pastries, certain vegetables, and raw apples cause a marked bloating, usually seen within one to two hours after eating; often the clothing must be loosened because of pressure; belching gives some relief, as does soda; some nausea and even vomiting may be present; at times there is a hyperacidity with sour eructations, simulating peptic ulcer. These stomach symptoms may so distress the patient that he forgets to tell the examiner of occasional attacks of colic which have left him tender under the right costal margin. These attacks may be quite severe, though not as severe as when stones are present. There are often intervals of freedom from symptoms, again making one consider ulcer. Constipation as a rule, is included in the picture.

These findings in a rather obese, inactive, individual past middle life, (the "Fair, Fat, and Forty" syndrome of Deaver), leave little doubt as to the diagnosis. Icterus is rarely present where the trouble is confined to the gallbladder, hence its absence must never be taken as evidence against cholecystitis.

The patient often refers the pain to the "pit of the stomach," though most often it is found along the right costal border, radiating to the right shoulder, or even to the cervical region, thus simulating neuritis or rheumatism. Upper left abdominal pain is not infrequent; it may be accompanied by gastric distention and cardiac palpitation, thus directing the attention to the heart, and confusing the examiner. Occasionally the pain is in the right iliac fossa, making one suspicious of the appendix, which is frequently involved at the same time as the gallbladder. Pain in the right breast, without any local lesion, should make one consider the possibility of cholecystitis.

The gallbladder may be the focus for arthritis, myositis, or neuritis, and it is not unusual to see a chronic migraine disappear after removal of this viscus.

ACUTE CHOLECYSTITIS

Here the picture may be one of two types, depending upon whether or not the cystic duct is obstructed.

In the simple non-obstructive form there is a gradual onset with malaise, nausea, loss of appetite, bloating and belching, aching pain, slight fever and leucocytosis, coated tongue, constipation, and headache. There is a definite, but not severe, tenderness and rigidity in the right hypochondrium. The attack usually subsides in a few days under expectant treatment. Occasionally, however, the infection may be extremely virulent and lead to a gangrene or empyema, with perforation, abscess, peritonitis, or the formation of a fistulous communication with some portion of the gut.

The onset of acute obstructive cholecystitis is quite a different picture, and almost unmistakable. There is a steady severe boring pain in the epigastrium or right upper abdomen, usually radiating to the right scapula; distention is often coincident; the patient has pain in any position he assumes, and "just can't get comfortable". Breathing is often painful, due either to tympanites or diaphragmatic spasm. Tenderness and rigidity in the right hypochondrium are extremely marked, usually preventing the palpation of an enlarged, tense, tender gallbladder. There is a rise in pulse and respiratory rate, temperature, and white blood cells.

In a recent case, within seventy-two hours after the onset, the leucocytes rose to 31,000, coagulation time to twelve minutes, though jaundice had been present but twelve hours, and there was marked abdominal distention. The leucocyte count was strongly suggestive of an empyema of the gallbladder, yet at operation there was no evidence of pus, but some inflammatory ascitic fluid, many recent adhesions walling off a large intensely congested, thick-walled, friable edematous gallbladder, containing thick black bile with the outlet completely blocked by a single large cholesterin stone impacted in the beginning of the cystic duct.

In these obstructive cases morphine gives but temporary relief and the symptoms are again the same as before, when the effect of the drug has worn off. The distention is frequently due to the adhesion of the hepatic flexure of the colon to the inflammed gallbladder. Edema and swelling of the organ with its duct and adherent omentum, may cause sufficient pressure on the common duct to produce jaundice, which in turn prolongs the coagulation time of the blood. This, of course, adds greatly to the risk that must be accepted, for one cannot be content to rely on expectant treatment in this type of case; operation is imperative. It is my practice to give some coagulant as fibrogen, subcutaneously, two to three hours, if possible, before the operation. Cholecystectomy is inadvisable under these conditions, and the operator should expediate matters by contenting himself with relief of the obstruction and drainage of the gallbladder.

CHRONIC CHOLECYSTITIS

Most cases of biliary disease are undoubtedly found in this class. We see the "chronic dyspeptic", afraid to eat, usually a victim of "the pill at night" habit, belching gas after meals, with a sense of fullness in the upper abdomen during this period of the day. Frequent soreness under the ribs, especially after exercise, or in cold damp weather, adds to the picture. Occasionally there appears the acute colic with severe pain going to the shoulder, prostrating the patient, and requiring hypnotics for relief. Slight icterus may at times be found in the skin and sclerae. If these attacks are not too severe or too frequent, the patient may go for years before some complication or increased severity or frequency of the attacks, brings him to the physician. This is the type of patient that derives the greatest benefit from an interval cholecystectomy, done before the disease has progressed to the point of involving and damaging adjacent organs.

CHOLANGITIS

This complication is almost invariably secondary to or accompanied by cholecystitis, usually with stones. The symptom complex is familiar to all; the chills, fever, recurring colics, orange yellow jaundice, clay-colored stools, bile laden urine, leucocytosis, and often weight loss, make up a story that is typical of the condition. Physical examination adds but little, often showing nothing or possibly slight epigastric tenderness. If there be malignancy of the biliary tract there is the progressive greyish-green jaundice, marked weight loss, cachexia, and usually an enlarged gallbladder. Most cases of malignancy will give an antecedent history of gall stones, which is an added argument for surgery in the early stages of the benign condition.

The diagnosis of biliary disease is mainly dependent upon a careful history and physical examination. However, one should, when possible, avail himself of the additional information to be obtained from the laboratory. The blood count, coagulation time of the blood, urinalysis, and often a fecal examination, will be of importance. If time is not a factor, the studies may be augmented by the x-ray, test meal, the duodenal tube, and the test for bile in the blood serum.

Roentgenology shows us a certain percentage of gall stones, thus being of value in a positive way, but is of little value if negative. It may show stones or a thickened, enlarged organ; deformity of the duodenum from pressure; or, in doubtful cases, either by showing a gastric or duodenal lesion, or the absence of the same, it can be of great value in making the diagnosis.

Leading roentgenologists are quite well agreed, I believe, that to accurately visualize the gallbladder, some opaque medium that localizes in the viscus and casts a shadow, and is secreted by the bile, must be utilized. For this reason Graham and Cole have used the dye, tetrabromphenolphthalein, and later its sodium salt which is more soluble and less toxic, intravenously.

Carman and Counseller, (1) have used this method in 178 patients in the past two years, and recommend that it be used only in selected cases. It is indicated to define cases of gallbladder disease that are not clear-cut, to rule out the gallbladder in puzzling cases, to distinguish gall stones from calcified glands, and to reveal silent stones. Because of the toxicity of the dye, there are definite contraindications, such as: (1) hypertension, (2) common duct obstruction, (3) hepatic damage, (4) auricular fibrillation, (5) arteriosclerosis, (6) hyperthyroidism, (7) chronic heart disease, and (8) extreme diabetes. The test is quite unnecessary in all known cases. The toxic reaction is not usually severe and is readily controlled by the injection of adrenalin.

Thirty-nine of the 178 patients examined have been operated upon and pathological gallbladders found, thirty-four of them having given abnormal responses to the test. (Abnormal responses include failure of the viscus to fill with the dye, scanty filling as shown by persistent faintness of the shadow, partial filling deformity of the contour, and mottling). Twenty-five cases had stones, nineteen of which gave no shadows at any time, and others were only partially satisfactory. Of fourteen cases of cholecystitis without stones, eight failed to show any shadow of the dye two gave a visible shadow at the fifth and eighth hours only, and in one the shadow was visible at the twenty-fourth hour only. In five cases the response was considered normal.

In have quoted the above figures to emphasize the uncertainty of the findings with the best roentgenologic technique available at the present time; the need for accurate histories and careful physical examinations, and the unwisdom of subjecting the ordinary gallbladder patient to the expense, discomfort, and time loss entailed in present day gallbladder roentgenology.

Undoubtedly the method will be developed to a greater degree of efficiency and usefulness, but at the present time it is an experiment to be used only in selected cases, by men that are investigating and developing the method.

Since the above was written, Milliken and Whitaker, of The Peter Bent Brigham Hospital, Boston, have presented an article, in which they advocate, and report the results from the use of sodium tetraiodophenolphthalein, in the place of sodium tetrabromphenolphthalein. They use 0.040 gram per kilogram of body weight, intravenously, in a 1 to 2% normal saline solution. Only one reaction has been seen in its use in 20 cases. Their diagnoses in pathological conditions of the gallbladder have been correct in 95% of their series. It would appear from this report that the roentgenologists will very soon be in position to give us some definite and reliable data on gallbladder conditions.

The test meal is also of extremely doubtful value. Certain cases, possibly most of them, show a decrease in the free acids, while others will show a hyperacidity. The findings are too varied to be of any real value in the diagnosis.

The test for bile in the blood serum is of value as an aid in cases where there is a slight obstruction to the common duct, but not enough to cause jaundice of the skin or sclerae.

The duodenal tube cannot accurately locate biliary infection, yet it may be of value in demonstrating the presence of pus cells, bacteria, and lymph in the bile. In cases where operation is not advisable, an autogenous vaccine may be prepared from the material withdrawn, and the use of this in conjunction with the introduction of half-saturated magnesium sulphate solution is sometimes beneficial.

An important advance in the reduction of the mortality of operation in the presence of icterus has been made possible through the work of Walters (2). He found that the cause of postoperative death in cases of obstructive jaundice was mainly intra-abdominal oozing from the raw surfaces; these deaths occurred one to seven days after the operation, whereas if the bleeding had been from the cystic or other arteries, one would expect an immediate fatality.

In this method, 5 cc of a 10% calcium chloride solution is injected intravenously, on three successive days. Calcium lactate, 100 grains, is given by mouth each day; large amounts of carbohydrates are given by mouth and by proctoclysis, and at least 2500 cc of water should be taken each 24 hours, to overcome dessication and aid in the elimination of bile pigments. The reduction of the coagulation time is almost immediate and persists for eight to fourteen days. If it again rises it may be again controlled by another intravenous injection. The maximum benefit is seen at the end of three to four days. If the patient does not respond to this regimen, a blood transfusion should be given at least 24 hours before operation. A cholecystectomy should not be done in the presence of jaundice.

In doing surgery of the biliary tract, adequate incision and perfect exposure are essential to insure success. Exposure of the gallbladder is greatly facilitated by cutting the suspensory ligament of the liver between clamps, ligating the lower stump, and exerting traction on the forceps attached to the upper stump. The ends are quickly reunited at the completion of the operation and there are no harmful consequences from the procedure. Clear visualization enables the operator to avoid the many accidents that are possible, and largely preventable if each step in the operation is clearly seen. In performing a cholecystectomy the cystic duct should first be isolated and clamped well away from the common duct; this clamp may or may not include the cystic artery. If it does not, it will be included in the second clamp which is applied parallel to the long axis of the gall bladder. It is of greatest importance not to clamp the cystic duct too close to the common duct, as this error has been the chief reason for injuries to the latter and the failure of the ligature on the former to remain in place, either of which results in a biliary fistula. By removing the gallbladder from the cystic duct outward, the peritoneal covering may be left, thus doing away with the usual raw area in the gallbladder bed that gives rise to oozing and invites adhesion formation. The ordinary cholecystectomy may be closed without any form of drainage.

Removal of the gallbladder is the operation of choice in the ordinary patient with chronic cholecystitis, with or without stones. There are surgeons who still argue for drainage in spite of the many recurrences that necessitate a secondary operation, but the preponderance of evidence has caused most operators to favor cholecystectomy, unless there exists some definite contraindication. However, drainage has a definite place in biliary surgery, and at times, it would be an error of judgment to do more, as in (1) acute gangrenous cholecystitis, (2) the severely jaundiced patient with prolonged coagulation time, (3) the very aged or severely debilitated patient, (4) the case of severe pancreatitis, and (5) cases associated with pregnancy.

In the hands of competent men, the mortality of the two operations is about the same; in recent years, however, the mortality of the -ostomy has risen above that of the -ectomy for the reason that drainage has been reserved for the patient who is a poor surgical risk. The length of stay in the hospital is, without question, much longer in the drainage cases. The ultimate result or outcome of the case is the greatest argument in favor of cholecystectomy. C. H. Mayo(3), reports the results in several hundred cases; of those on whom cholecystostomies were performed, 53% were cured and a large majority of the remainder improved; of those who had cholecystectomies, 71% were cured, and a large majority improved. Improved diagnosis and operative technique of recent years, no doubt have brought about even a higher percentage of cures in the latter operation, than is here quoted. Recurrences are far more infrequent after removal than after drainage. When they do occur, they are due, as a rule, to incomplete exploration at the time of operation. The condition of the cystic, hepatic, and common duct should be ascertained, for it is of little value to remove several hundred gall stones from the gallbladder and leave one in the hepatic or common duct. If there be much question as to the presence of stone in the common duct, it should be incised and explored, or at least aspirated by means of a hypodermic syringe.

Weible(4), calls our attention to the indications of hepatitis seen at operation, and secondary to or associated with cholecystitis. These indications are of two types; first, the dull gray patches on the liver near the gallbladder; secondly, milky white lines of varying length, breadth, and prominence. These lines are the result of an inflammation and subsequent cicatrization of the lymphatics of the liver. The dull gray patches are the result of a chronic hepatitis. These signs may be found in the absence of any gross evidence of gallbladder disease, and may be relied upon for the intra-abdominal diagnosis of chronic cholecystitis, and as indications for cholecystectomy.

The completeness of relief from symptoms, following any operation is dependent to a large extent upon the care a patient receives after leaving the hospital. Especially is this true of patients who have been subjected to biliary or gastric surgery. The patient should be informed of the necessity for this postoperative care and brought to realize that the full benefit of the operation does not appear until four to twelve months after his operation. It is his right to be warned against exertion that places too much strain on the abdominal muscles for at least two months. The mouth should be kept clean by daily mouth washes and any foci should be eliminated. For some time, greasy foods, raw apples, pickles, heavy sweets, and hot breads should be avoided.

The diet should consist largely of chicken, eggs, fish, red meat in moderation, milk, cereals, well-cooked vegetables, and a fairly large amount of water. Exercise is best obtained by walks of increasing lengths, in the fresh air. The bowels should be regulated as far a spossible by exercise, proper food, and a regular hour of going to stool. Mild laxatives only should be employed, if they are required at all. The overloading of the stomach by huge meals is a common cause of various complaints and the patient should be advised against this, being instructed rather to eat five smaller meals a day if necessary to appease his hunger. A little time spent in explaining these points to the patient about to leave the hospital will be repaid, in both comfort to the patient, and in better results to the credit of the surgeon.

THE APPENDICO-BILIARY SYNDROME*

Max Emmert, M. D., F. A. C. S., Omaha, Nebr.

(Former contributions to this subject may be found in the Nebraska State Medical Journal for May, 1924, and December, 1924.)

Inability to comfortably handle fats is the chief complaint of one suffering from the appendico-biliary syndrome, when questioned regarding food selection. An ingestion of fatty foods nearly always causes digestive disturbance, whereas abstinence from fatty foods ameliorates the symptom complex. When we recall that the existing hepatitis is the outstanding factor in this syndrome, then this fat disturbance can be explained by physiological reasoning.

Ingested fat is normally unchanged in the stomach. As it enters the duodenum it is brought into contact with bile and pancreatic juice containing the fat splitting enzyme called lipase. The broken up fat globule is taken up by the lymphatics and enters the general circulation through the thoracic duct. 60% of ingested fat having been recovered from the thoracic duct. There is no evidence to show that any of the fat is absorbed into the portal vein.

Physiologists have shown that pancreatic juice alone has a very sluggish digestive action upon fat. In man the withdrawal of pancreatic juice alone diminishes the absorption of fat by 50-60%. If both pancreatic juice and the bile are removed, the absorption of fat is diminished by 80-90%. The administration of either bile or pancreatic powder in such cases greatly improves fat absorption. Therefore, it is essential that pancreatic juice and bile be present in sufficient quantity and quality to assure proper fat digestion. Bile being essential in order to materially increase the lypolytic action of the pancreatic juice.

Bile is also important because it contains alkali and mucin like substances which assist in the emulsification of fat thus rendering it more susceptible to the action of lipase. The alkali also combines with fatty acids as they are liberated by the digestive action to form water soluble soaps which are easily absorbed by the epithelial cells.

Bile is important not only because of its relation to digestion and absorption of fat but also because it functionates as a regulator of intestinal putrifaction through its laxative properties. It is well known that the great majority of patients who are suffering from this syndrome are constipated and it is reasonable to, at least partly, attribute this constipation to a deficiency in the quality or quantity of bile excreted.

---

*Read before the annual meeting Nebraska State Medical Association, Lincoln, May 12-14, 1925.

Another salient clinical fact is that the feces of these patients are usually light yellow in color especially during an exacerbation of their biliary symptoms. As the color of feces depends to a great extent upon the bile content, then fecal color has a clinical bearing in the diagnosis of this condition. Bile pigment is a peculiar product of hepatic activity, being produced from blood pigments that are derived from erythrocytes which have been broken down either in the liver itself or in some other viscus. Therefore, impaired hepatic activity would modify the production of bile pigment which coincides with our clinical findings. Anything which interferes with free secretion of bile will cause an accumulation of bile pigments and bile salts in the blood. This fact is clinically evident in cases of acute hepatitis and cholecystitis.

The liver, apart from its function of secreting bile which is so essential to the digestion and absorption of fat from the small intestine has another most important work to perform in connection with fat. Leathes and his pupils have shown that it occupies an extremely important position in the metabolism of fat. The fat absorbed from the intestine is stored in the tissues of the body until there is a metabolic demand for it on the part of the organism. When this occurs, the fat is carried to the liver where, by action of the liver cells, the potential energy of the fat is unlocked, as it were, so that when carried back to the tissues the liberation of energy occurs. In other words, fat can not be used for energy until favorably acted upon by the liver cells. Would this not explain the reason why the majority of gallbladder liver cases are obese?

Granting that the aforesaid physiological facts are true, then it is easy to perceive that any disturbance of the liver function will cause trouble. We know from the work of Graham, Peterman, Heyd and others, that hepatitis is always associated with cholecystitis and probably precedes the cholecystitis. This hepatitis is not only microscopically present but is evident macroscopically. In operating upon these cases all grades of inflammatory processes may be seen in the liver, from the acute which manifests itself as a large beefy red liver to the small grayish type of chronic hepatitis. I recall one subacute case in which several drops of pus exuded from the liver tissue after the removal of the gallbladder.

The pain and tenderness of the acute and sub-acute cases are not confined to the gallbladder region alone but extend along the right costal margin and right sub-costal region. This is probably due to the stretching of Glisson's capsule by the swollen liver. In chronic cases the tenderness as a rule is elicited only in the gallbladder region, it sometimes being necessary to turn the patient on the left side in order to find this point of tenderness.

Associated with the aforesaid signs and symptoms in a majority of cases is the presence of a tympanitic stomach which may or may not be accompanied by eructation of gas especially after meals. The extent of this gastric distension has a distinct relationship to the cardio-vascular system. A great many of these patients have a slow pulse, whether this is due to toxic absorption or to direct pressure of a distended stomach which interferes with heart action is problematical. Occasionally the cardiac symptoms are so marked as to overshadow the biliary syndrome and an erroneous diagnosis of cardiac disease is made. These symptoms consist of a smothering sensation, dyspnoea, rapid and irregular heart action. Careful questioning of the patient will bring out the fact that the so called heart attacks are always associated with a distended stomach and correction of the biliary syndrome will result in a disappearance of the cardiac symptoms.

I wish to repeat several important points to which attention was called in previous contributions.

1—Infection may reach the liver either by the portal vein or the general circulation. By either route, a peri-portal hepatitis results. From the liver the infection is carried by the lymphatics to the gallbladder with a resultant cholecystitis. From the gallbladder it may be carried by the cystic veins into the portal and back to the liver or it may be carried by the lymphatics to the mesenteric lymph glands or to the pancreas with a resultant pancreatitis.

2—Infection of the liver is in my opinion carried from the appendix via the portal system in approximately 75% of cases and from infected teeth, tonsils, and sinuses via the general circulation in approximately 25% of cases. Deaver claims that 90% of his gallbladder cases showed pathology in the appendix and Heyd says that 67% of his cases were caused by the appendix.

With these anatomical and physiological facts in mind it is self evident that the treatment of this condition is neither medical or surgical but that only by a combination of medicine and surgery can the best results be obtained. As the hepatitis and cholecystitis are secondary, it is necessary first to remove the primary foci of infection, especial attention being directed to the appendix, the tonsils, the teeth and the sinuses. In my own experience I find that if the biliary symptoms have been present for one year or longer, satisfactory results can not be obtained simply by the removal of the primary foci. In these cases cholecystectomy is indicated in connection with the correction of the primary foci.

Treatment is only partially complete after the surgical stage as the hepatitis still persists and it is here that a well organized medical regime is indicated. The object of this regime being to create as nearly as practical a state of physiological rest for the liver. This can be largely accompanied by a fat free diet. In some cases it is necessary to limit the carbohydrates. Sodium phosphate is indicated because of its stimulating action upon the liver cells and, by reason of its alkalinity, it increases the activity of the bile and aids in the relaxation of the sphincter Oddi. I feel that urotropin has a definite antiseptic effect upon the liver and is indicated especially in the acute and subacute cases.

The successful outcome in these cases is dependent in a large measure upon the state of hepatitis. A chronic hepatitis which has reached a condition of cirrhosis can not be brought back to normal under any therapy but by proper attention directed to the pathology these patients can be made more comfortable.

RESUME

1—Inability to digest fats is the outstanding symptom of the appendic-biliary syndrome.

2—This is due to the existing hepatitis which

a—Causes mal-secretion of bile which interferes with fat absorption and

b—Prevents the proper function of the liver cells upon the fat carried to the liver for fat digestion.

3—Light yellow feces is suggestive of hepatic insufficiency.

4—Pain and tenderness is located over the entire liver during acute and subacute stages, over the gallbladder alone in the chronic cases.

5—Gastric distension is practically associated with this condition and may produce cardiac symptoms.

6—Infection reaches the liver through the portal vein in approximately 75% cases and through the general circulation in 25% of cases.

7—The hepatitis is the secondary infection and cholecystitis the tertiary.

8—The treatment resolves itself into the removal or correction of primary foci, the removal of the gallbladder in late cases, placing the liver at physiological rest, and medication directed to the hepatitis.

CONCLUSION

An appreciation of this syndrome on part of the attending physician plus an early instigation of the proper treatment will in the majority of cases result in satisfaction to both the attending physician and the patient.

BIBLIOGRAPHY

Physiology and Biochemistry in Modern Medicine, 1922, McCleod.
Johns Hopkins Hospital Bulletin, 1901, Sudler.
Archives of Surgery, Jan., 1922, Graham.
Archives of Surgery, Jan., 1923, Deaver.
Jr. A. M. A., Sept. 1, 1921, Judd.
Jr. A. M. A., Nov. 1, 1924, Heyd.

—446 Aquila Court.

THE POSSIBLE MEANS OF PREVENTING DEEP CERVICAL ABSCESS

The occurrence of deep cervical abscess following operations under local rather than under general anesthesia, William B. Chamberlin, Cleveland (Journal A. M. A., July 11, 1925), says would point to the method of producing the anesthesia as being the probable cause. Although susceptible of no definite proof, the transfixing of tonsillar tissue by the needle and the consequent transmitting of infectious material into the deep structures of the neck seems the most likely cause of deep cervical abscess. A method producing local anaesthesia is given in considerable detail, on the supposition that a faulty method for the production of this anesthesia is responsible for these unfortunate cases.

HOW THE MORTALITY MAY BE REDUCED IN OPERATIONS ON THE GALLBLADDER AND GALL DUCTS*

John E. Summers, M. D., F. A. C. S., Omaha, Nebraska

It is with some apprehension that I venture to discuss from the viewpoint of the title of my paper several problems in the treatment of the diseases of the gallbladder and bile ducts. Every well-read and experienced physician and surgeon is familiar with what world-wide study of the pathology of the living has taught concerning the relationships of inflammations and infections of the liver and its ducts, the gallbladder and its duct; the stomach, duodenum, pancreas, and vermiform appendix. Infection may have its source from the teeth, tonsils, facial sinuses, from any part of the hollow viscera, either directly into the blood-stream, or else by way of the thoracic duct. It is generally recognized now that infections attacking the gallbladder chiefly, do so by way of the lymphatics; they may reach the gallbladder through infected biliary secretion derived either through the portal circulation or else from the duodenum. The practical application of the experimental work of physiologists and physio-chemists is bringing to light several problems of real value in the early recognition of disturbances of liver function and damage, as expressed in pathological changes in the liver, gallbladder and gall ducts.

These studies are developing a new era of advancement in what may hopefully be termed prevention; if not prevention, then early recognition of infection and its correction if possible, by dietary and medical means. These failing, there should be no procrastination in prompt surgical therapeutics. The infection of the gallbladder may start in the mucosa, muscularis, or peritoneum, and the most common menacing organism is the colon bacillus. Sir Berkley Moynihan has recently, in a most illuminating article, called attention to the fact that an increase of the colesterol content of the blood is a predisposing factor to the formation of gallstones. He has noted "over 75% of patients in whom hypercholesterolaemia was found were suffering from cholelithiasis. The blood examined after operation shows that after all operations of magnitude there is a fall in the cholesteral content. This fall is followed slowly, as a rule, by a rise which may carry the content up to or beyond the normal". To prevent a recurrence Moynihan has prepared a dietary table of forbidden and advocated foods, and he now gives all of his operated patients a chart showing what may be eaten and what should be avoided. The lesson to be learned in respect to the blood content of cholesterol is important in its relation to gallbladder disease and its accompanying disturbed liver function. "Cholesterol is a member of the important group of substances known as lipoids. It is an invariable constituent of all active cells of the body, both in its free form and in combination as ester. In disease it may occur in abnormal amounts in various organs, tissues, fluids, and calculi. It is present in the blood in very variable quantities. The normal amount may be stated as 0.160 per cent. In older persons as rather more than tnis". (Moynihan). For purposes of classification, Moynihan and his co-worker, Dr. Cecelia Shiskin, regard less than 0.133% as indicating hypocholesterolaemia; between 0.133% and 0.160% as normal; between 0.160% and 0.192% as being high normal; above 0.192% as indicating hypercholesterolaemia. This latter condition is also found in cases of arteriosclerosis, chronic nephritis diabetes, and in the later months of pregnancy". Blood chemistry should be studied in its relationship to many diseases as a diagnostic and prognostic factor, as I have just pointed out. The cholesterol percentage should be determined in suspected disturbance of liver function, as indicated by the symptoms of gallbladder infection, even when they may be mild, as these infections sooner or later, in many instances, progress to serious pathology. Early recognition may lead to prevention.

The determination of the amount of serum bilirubin in the blood is now recognized as of great value in determining the differential diagnosis of abdominal colics. Carl H. Greene of the Mayo Clinic, has recently published a paper discussing the Functional Tests in Hepatic Disease (Minnesota Medicine). He calls particular attention to the comparative analogy of the use of the dye phenolsulphonephthalein in the testing of renal function of the kidney, (a test which every physician knows, and which is a standard practice of all urologists), as compared with the use of a related dye, phenoltetrachlorphthalein, in the study of liver disease, which after intravenous injection, is taken up from the bloodstream, and through the liver is excreted in the bile. This dye was first introduced into clinical medicine by Rowntree, Hurwitz, and Bloomfield. Green discusses a modified test by Rowntree-Rosenthal, in his experimental work for the determination of changed hepatic function. "The technic of the test is simple. The solution of the dye may be obtained in ampules. One cubic centimeter of this solution is injected intravenously for each 22 pounds of body weight. Fifteen minutes, one hour, and two hours later, blood samples are taken, 5 c. c. at each time being ample. The clear serum is separated, a drop of alkali is added to bring out the color of the dye, and comparison made with standard tubes. Normally, the dye is rapidly removed from the blood stream. At the end of fifteen minutes only 5 to 7% remains, while at the end of an hour only traces of dye are present. In patients with obstructive jaundice, as much as 30% of the dye may still be present in the blood stream, two hours after the injection". In the clinical study of forty cases of obstructive jaundice, it was found that in cases of cholecystitis without jaundice, there was only a slight degree of dye retention. Progressive degrees of jaundice were marked by increased definite dye retention in the blood stream. After surgical correction of the pathology, dye retention gradually decreased as well as the amount of serum bilirubin, which rapidly returned to normal.

---

*Read before the annual meeting Nebraska State Medical Association, Lincoln, May 12-14, 1925.

It would appear also, where gross pathology was observed, that there was a more or less permanent dye retention which seemed to indicate the amount, not of disturbed function, but of liver damage.

Greene says that the dye test "is of great clinical value in the study of those cases of hepatic disease in which jaundice is not a factor". It enables the clinician to locate the pathology by the too-long rentention of the dye in the blood-stream. I am convinced that this Rowntree-Rosenthal test will prove of great value as a diagnostic measure when it has been more carefully and thoroughly worked out by those in a position to do so. Our experience with the Rowntree technic for the determination of liver function, using five milligrams per kilo body weight, of sodium tetrachlorophthalein salt intravenously, convinces us that normal livers should allow only 3 to 6% of the dye to be found in the blood-stream after fifteen minutes, and none after one hour. The test has been employed in nine cases in the Hospital, during the past two months; all of the patients were those suspected of liver deficiency. Of the nine, four patients showed a marked retention. One patient a sufferer from cancer of the liver, who was markedly jaundiced, had a 25% retention after the first hour. Later, by post-mortem, the diagnosis was confirmed. A second patient, suffering from cirrhosis of the liver, who was jaundiced, had a retention after the first hour, of 20%. The diagnosis was confirmed by autopsy. In another patient whose case was diagnosed as chronic cholecystitis, the retention was 10% after the first hour; because of complicating conditions the operation was postponed, but there would seem to have been no doubt as to the correctness of the diagnosis. A fourth patient, diagnosed as cholecystitis, with a ten per cent retention after the first hour, was operated upon, and cholecystitis, cholelithiasis, and hepatitis, discovered. In another instance, most interesting to me, a large very heavy abdomened woman, had had her gallbladder drained for acute cholecystitis about two years before entering the hospital. She came complaining of pain, and symptoms distinctly referable to the gallbladder; the sodium tetrachlorphthalein test gave a picture of the gallbladder showing that it was functioning normally but its outline was irregular, indicative of this condition being due to adhesions. Upon examination the disturbed outline was found to be caused by numerous adhesions which were released. The gallbladder itself was not operated upon; to have removed it, because of the woman's conformation, and the liver being small and high up under the ribs, would have been a difficult procedure, and unnecessarily jeopardized her life. The operation, however, would have been carried out, had it not been for the fact that the positive shadow of the dye had proven the functional capacity of the gallbladder.

Although some work in this direction has been done in our University Hospital, where gallbladder surgery is a common procedure, I hope in my Clinic to have it studied more extensively in the future as opportunity presents itself. We have had, however, a limited experience with the "Roentgenological Visualization of the Gallbladder by the Intravenous Injection of Sodium-tetrabromphenolphthalein", (Annals of Surgery, Sept., 1924), done after the Graham-Cole method, with which I take it you are familiar. I regard this test of great value as indicating the extent and degree of the pathology of the gallbladder, and in this way acting as an index as to whether, taken with other clinical findings and the general condition of the patient, a surgical procedure should be carried out.

At the University Hospital, from August, 1924, to May, 1925, we have examined seventeen cases, by this method. Of these there were nine which showed no shadow or an irregular shadow. Eight were operated upon and in each pathology demonstrated, stones were found, or the cystic duct was occluded, or the walls of the gallbladder were thickened, and the gallbladder contained black, thick bile. Eight cases showed normal shadows, two of these were exposed while doing other work in the abdomen. The gallbladders were apparently normal, although their history pointed towards the possibility of gallbladder disease. Graham has very recently (within a month) published a paper in which he recommends the use of tetraiodophenolphthalein for cystography, in preference to the use of injections of sodium-tetrabromophthalein; the shadows are more positive, and the disturbances are less, in fact they are practically nil. As indicative of the worth of this method of cholecystography as a diagnostic measure in lesions of the gallbladder, Dr. Sherwood Moore of the Department of Radiology of Washington University, where Graham works, reports a correct diagnosis of gallbladder pathology in 92.5% of 55 cases, in which diagnosis was confirmed by operation. Graham says the procedure is particularly valuable in those cases of early cholecystitis in which clinical and other methods of examination leave one in doubt as to the diagnosis.

I recently had an opportunity to visit Doctor Graham's Clinic in Saint Louis, where I had the pleasure of seeing the doctor at work. He told me that now he felt that by cholecystograph the diagnosis of cholecystitis could be made in about 95% of all cases. This to me, is a remarkable achievement and should prevent many delays in the surgical treatment of gallbladder disease, and hence decrease the mortality.

I find myself, from year to year, increasing my percentage of cholecystectomy as compared with cholecystostomy, yet I have not been carried away by the practices and writings of many clinicians and their bellwether followers. The removal of the gallbladder when it is infected, if it can be safely carried out, is the ideal procedure and about this there can be no controversy. It not infrequently happens, however, that a cholecystectomy may be too jeopardizing and a better judgment would indicate a cholecystostomy. Too many unnecessary complications and an occasional loss of life follow a lack of judgment in these circumstances. Because of the direct lymphatic connection between the liver and the gallbladder, when the gallbladder is infected there is always an accompanying hepatitis and the degree of this hepatitis may at times be visualized and the findings indicate damaged liver, and should, when there are no contradicting complications, call for a cholecystectomy. These findings are irregular lines, scar-like, paler than the liver tissue, branching out from the neighborhood of the gallbladder on the under surface of the liver, and often found on the upper surface opposite the upper third or half of the fundus of the gallbladder. Proportionately more of these lines are found on the under than on the upper surface. They were first described by Doctor Weible of Fargo, N. D. Reasoning in the other direction, from the liver towards the gallbladder, these lines may be said to be positive indices of a cholecystitis which has existed for a considerable period, although at the time the observation is made the infection may be quiescent.

One of the greatest advances in gallbladder surgery is the prophylactic preparation of cholemic patients against hemorrhage. In the past, when cholemia was very severe, even to bronzing, the condition was almost prohibitive of the carrying-out of an operative procedure because of the danger of hemorrhage, continuous oozing. At the Mayo Clinic Dr. Waltman Walters, in preparing cholaemic patients for operation, acting on the suggestions of physiologists in the use of Calcium chloride intravenously, has succeeded in reducing the mortality of the operative procedure in patients of the Mayo Clinic from 10% to about 3½%, and by this means he has also increased the operability of such patients, many surgeons having refused surgical aid to advanced cholaemic patients because of the known dangers of the procedure. More venturesome surgeons have had a mortality running up to 20, 30, and even 50%.

As far as the danger of post-operative hemorrhage is concerned in this class of patients, this can be practically eliminated by proper pre-operative preparation by the intravenous injection of calcium chloride. I have had a number of experiences corroborative of this, among them a woman, a patient of Dr. A. D. Dunn, so intensely cholemic that she was absolutely bronzed and seriously toxic. After a few days' preparation, calcium chloride (15 gr.) being administered intravenously twice daily, her obstructive jaundice was relieved by the removal of stones from the common duct and she made a fine convalescence without hemorrhage, although there was some delay because of a mild bronchial pneumonia. It required a number of weeks for the disappearance of the bronzing and jaundice. Two days ago, she walked into my office with a clear, fair complexion, a healthy, much younger looking woman than I had taken her to be. I did not know her; she introduced herself. I cite this extreme case as an example of what may be accomplished by proper preparation of these jaundiced patients.

During my career I have lost several cholemic patients because of our general lack of knowledge of how to prepare them for the severe ordeal sometimes encountered in removing stones from the common duct.

Mishaps in the relatively simple gallbladder cases in which cholecystectomy in one may occur by slips in technic due to improper visualization, not revealing anomalies of ducts and blood-supply arrangements. Much more often is this likely in complicated cases. To avoid these mishaps proper visualization must be obtained. The cystic duct should be thoroughly isolated and ligated at a reasonable distance from its termination before the gallbladder is removed; likewise, the cystic artery should be tied before the gallbladder is removed. Too great traction upon the gallbladder after the duct has been isolated, may drag the common duct upwards so as to look like the lower part of the cystic duct, and the ligature, instead of being applied to the cystic duct itself, is applied to the common duct, with serious after consequences. If clamps are applied to the cystic duct and cystic artery, and then the gallbladder removed the application of the ligatures is sometimes a difficult procedure in heavy, fat abdomens, and is done more by sense of touch than by sense of sight, and the security of the ligatures is not so dependable. I know of one instance in which a valuable life was lost from postoperative hemorrhage, because the cystic artery itself, was not ligated. The autopsy proved this. This occurred in the hands of an experienced operator and among many other instances, I recall especially another fatal case done also by an experienced operator in which the cystic duct was not securely tied, and in this instance the so-called ideal operation was employed, i. e., the abdomen closed without drainage. This brings me to another point in my paper, the growing practice of removing the gallbladder and closing the abdomen without the establishment of some form of drainage. It is occasionally followed by unnecessary deaths. I, personally, know of two at the hands of one operator and a third at the hands of another, both experienced men, and Doctor Deaver, a leading advocate of cholecystectomy, tells me that he has been called in late as a consultant in six cases where death followed the no-drain practice. I have heard of many similar instances. It does no harm to leave a small rubber drain passing from the bottom of the operative field to the abdominal surface for 48 to 72 hours, and then remove it, if everything is all right. If an accident has occurred, if leakage or infection has developed, the drain acts as a safety valve; it does no harm. For the reasons that I am giving, I am glad to be able to quote Moynihan, the peer of all others, if not the greatest abdominal surgeon living, when he says, "I have closed the abdomen without drainage after removal of the gallbladder on many occasions, but I never do so now", and this was written in February of this year. In our Country, among many other good surgeons, of whom there is none better, Deaver says he always drains. And of the younger well-recognized, progressive leaders in the surgery of today, I can quote Evarts Graham of Saint Louis as having said to me that he did not favor the no-drain technic, it was an unnecessary hazard. I do not believe that a cholecystectomy should be done at the same time that gallstones are removed from the common duct. This is a fairly good rule; it has many exceptions, but they should be based on good logic. Positively, however, when the cholecystectomy is done, it should be the last part of the operation, that upon the gall ducts first; otherwise, the key to the situation may be lost. I have seen the reverse practice carried out with much floundering as a result, and in one instance a fatality;

unquestionably many others have occurred. My experience with the surgery of the gallbladder and gall ducts began with its development and has continued to the present day. It is difficult to evaluate the progress that has been made in the operative treatment of the subjects under discussion; cholecystectomy has largely taken the place of cholecystostomy, and in suitable cases to the advantage of the patient; yet neither operation is always followed by freedom from complaint and symptoms similar to those for which the operations were done. Early cholecystectomy takes away the danger of cancer of the gallbladder, an occasional following of neglected gallbladder disease; it eliminates spread of infection from this focus through connecting lymphatics to other neighboring parts, and eliminates the dangers of very serious gallbladder changes which at times threaten life, and sometimes cause death. Cholecystostomy, on the other hand, when done early is practically without danger and in the majority of cases relieves symptoms almost in equal proportion as does cholecystectomy. The gallbladder, however, still remains in a degree a menace which its removal, just indicated, would prevent. In many instances, it is the only operation justified.

Purposely, in this paper, I have tried to avoid bringing in for discussion the pathology of neighboring parts which may be more or less directly, or indirectly caused by, or associated with infections of the gallbladder.

DISCUSSION OF PAPERS OF DRS. ANDREWS, EMMERT AND SUMMER

W. W. ARRASMITH, M. D., Grand Island: It seems to me this is a great era for diseases of the gallbladder and liver. With the tests that are coming in — the sodium salts — unquestionably some great results will be produced in the next few years. At the Mayo Clinic, large teams are devoting their entire time to the subject of the liver and the gallbladder, each one taking some particular part. I think without doubt within the next year or two there will be some most marvelous revelations made in regard to diseases of the gallbladder and liver.

At the present time, it seems to me a great deal depends upon the diagnosis. It is not uncommon to open the abdomen for the purpose of doing some pelvic work, and on exploring the gallbladder, to discover gall stones. If you will turn to your history and go over it carefully, some vague gastric symptoms can usually be obtained. They were so vague one could not be able to make a diagnosis without getting his fingers on the organ. It seems to me in this particular class of cases, and in the other case where symptoms are vague and not operated upon, these new tests will be of extreme value.

The test as given by Graham is not difficult. We have been using this test for our own particular studies for six months. We have tried it out on eighteen cases. As I remember, some fourteen of these had been operated upon. I think in eleven, a definitely diseased gallbladder was found. In three who were operated upon for other things, a normal gallbladder was found. Our pictures conformed very nicely from a diagnostic point of view, and I believe with further study this method will be of real value.

A point impressed me in Dr. Emmert's paper. He mentioned something about distension of the stomach producing cardiac symptoms, masking your gallbladder symptoms. That it true, but we must not forget the reverse: oftentimes cardiac symptoms will produce symptoms simulating those of gallbladder disease. I am speaking of angina pectoris, something that is occasionally diagnosed as gallbladder disease, and it is a serious mistake.

A. I. MacKINNON, M. D., Lincoln: I did not hear the first part of Dr. Summers' paper, but from its title, I do not believe he spoke on anesthetics. I think that is the most important part of gallbladder surgery.

From my own experience, it does not make much difference what kind of a gallbladder you have, if you open and drain with local anesthetic, you are doing a minor operation, and it should carry practically no mortality.

I can not understand why a man of Deaver's standing should recommend cholecystectomy. That may be all right in his hands, but the chances are he can do any gallbladder operation—do a cholecystectomy—inside of ten minutes. Whether the anesthetic is ether or gas, the patient does not get enough to do much harm. We know ether causes acidosis and liver disturbance, and I think this is the largest factor we have at the present time in the mortality of abdominal surgery.

In the jaundice cases, spinal anesthetics work beautifully. In a gallbladder patient with a blood pressure about 130, I think a spinal anesthetic is the ideal anesthetic. If you have to do any reparative work on the ducts, or make an opening between your gallbladder and duodenum, it is a difficult piece of surgery under ether, because everything is working.

Another point in the technique of operating: I think the assistant is the most important member of the team. If you go into position to bend the back it doesn't make so much difference. If you reverse the position, you relax the abdominal muscles. If your assistant understands how to get a pad under his finger and use that as a retractor, the parts are exposed; and if the assistant is wise, they will be made so visible there is no trouble.

The thing I wanted to impress on you more particularly was local anesthetic.

E. WILLARD POWELL, M. D., Omaha: I do not know whether you really appreciate these three papers or not; but I am frank to tell you that I do not believe that in all of the medical meetings that will be held this year in America, or all the other countries combined, you will hear three better papers than have been read today. They have covered the subject of gallbladder disease and the experimental work that is being done as a helpful aid in the diagnosis of cholecystitis.

Let us analyze the situation. For instance, a few years ago we heard a great deal about the pre-cancerous stage. They fairly well put it over, but I have never been able to gather as perfectly clear in my mind what that stage was. Dr. Emmert has given us the pre-cholecystitis stage. I really think if we could take the infant—a female—and train her from birth as to diet, and that she never was allowed to marry or become pregnant, and carry her along as an ideal patient, she probably would not have cholecystitis. But I have never had that kind of a patient.

The other questions as to how infection starts are debatable and not clear. The experimental work is not clear, and unfinished. So I am going to say for the benefit of the general practitioners throughout the state, thank God there is one disease still left you can diagnose by the history! A perfectly well taken history and a real physical examination still offer, I believe, the best diagnosis of cholecystitis. I do not mean a half-way history or a half-way examination.

J. FREDERICK LANGDON, M. D., Omaha: There is one point Dr. Emmert brought up which we know we sometimes forget, in the treatment of gallbladder disease. We forget the focus of infection. I think the appendix is often the focus of infection, and Dr. Emmert has pointed this out very clearly how infection can travel from the appendix. He said in 75 per cent of these cases the appendix was the focus of infection. I do not know how he would prove it. We know it is in a great number of cases. If we removed the gallbladder, we would be removing the tertiary lesion, leaving the primary lesion, and still having hepatitis and giving us the same symptoms the gallbladder gave.

Dr. Judd says the careful surgeon will always look at the appendix.

In the preoperative treatment in gallbladder disease, I believe medical drainage is valuable. I am positive from my experience, pre-medical drainage with a tube before operation is of distinct value in getting the patients into good condition. They will get along better afterwards and have less vomiting. I think I am convinced from the experience I have had.

DR. ANDREWS, (closing): I was very glad to hear Dr. Emmert bring up the subject of the co-operation between the internist and the surgeon, both preoperatively and post-operatively. There is no question about the benefit of the operation being evident from three to six months after the operation, and just in proportion to the way the case is handled after it leaves the hospital, being largely a matter of regulation of bowels, diet, etc.

The confusion of cardiac disease and gallbladder disease by virtue of gastric distension is one we must not forget. It may confuse either way.

Dr. Emmert's paper merely emphasized to me another very good reason why we should not do an appendectomy under local with a small incision in the bowels. There is no doubt about the association of gallbladder disease and appendicitis. How can you get in from a McBurney's incision under local and explore your gallbladder and stomach? I feel strongly on that subject.

I was glad to hear Dr. Summers on the roentgenology of the gallbladder, and think a lot of good will come from this; also his credit to the man in North Dakota about these lines on the liver. They are distinct and pathognomonic of gallbladder disease, even with no evidence of disease in the gallbladder itself.

DR. EMMERT, (closing): One of the points relative to the preoperative preparation of the patient in order to prevent hemorrhage, which Dr. Summers brought out as one of the causative factors of fatality in these cases. If the patient is not jaundiced, fibrogen is one of the best hemostatics there is. With jaundiced cases, calcium lactate is preferable, because fibrogen does not decrease the coagulation time.

You have all seen surgeons at the operating table either look at the gallbladder or reach their hand and feel it and say, "There is nothing wrong with the gallbladder." I wish to make a dogmatic statement to the effect nobody can diagnosis an early case of cholecystitis either by sight or touch. When it has reached the chronic state where the gallbladder is thickened or fibrous or edematous and congested, it can be done. I have taken out gallbladders perfectly normal in the gross, but have proven pathology under the microscope.

Another thing that enters into the danger in liver cases is acidosis. It follows long anesthesia. It seems to me it is more marked in gallbladder liver and cases than any other type of case. It should be kept in mind when opearting upon this type of case.

Another point brought out with respect to the dangers in removal of the gallbladder is that of including your hepatic duct when tying off your cystic duct. In the majority of these cases, if the gallbladder and ducts are brought up, it is a simple matter to separate off the peritoneum so that you can see both duct and vessels before you clamp and tie.

Drainage is a matter of difference of opinion. The older men are doing more drainage. Personally, I am doing less. I probably close four out of five gallbladder cases, leaving no drainage, making an effort to suture the peritoneum over the raw surface of the liver; but I put a stitch around the cystic duct and run it into the abdominal wall so that we have a guide to carry us to our field of trouble if it occurs.

The big factor is not a cholecystitis, but a hepatitis, that is causing probably nine-tenths of the trouble from this disease. That is the one factor we have most trouble in clearing up, whether by surgery or medicine.

I am glad the Doctor brought out the point relative to cardiac disease causing gallbladder symptoms. There is no question about that. These cases to which I referred, I had a few in which cardiac symptoms accompanied the liver trouble. They were in young individuals without signs of an angina.

Dr. Powell brought up an important point, and he is absolutely right. Personally, I can not see the necessity of all the refined injections of dyes to make a diagnosis in these cases. A careful history, with this trouble in mind, plus a careful physical examination, will allow the physician to make the diagnosis in a vast majority of his cases.

Dr. Langdon asked how I reached my percentages. This was done from my own rules. I checked back over all my gallbladders and found approximately 75 per cent gave a history of former appendicitis, or an appendectomy for chronic appendicitis.

DR. SUMMERS, (closing): In answer to Dr. MacKinnon, I used the words in my paper, "proper visualization". I had not time, even if I had thought it necessary, to go into detail telling how this should be brought about. These are, and should be, four-handed operations, and the hands of the assistant, and his head, should be about as good as those of the operator, if you want to get good results. I give full credit to my assistants. Sometimes they do better work than I do and keep me from making mistakes.

I have noticed in the literature where someone brings out to the surface one end of the catgut ligature on the cystic duct stump as a safety valve, but that to me is scarcely enough safety. I would rather have a drain that would let me know sooner if something was wrong inside.

Ordinarily, with a good history and good physical examination, a diagnosis of trouble in this part of the abdomen can be made, but one cannot always differentiate between lesions of the stomach, duodenum, or appendix, all symptoms simulating something which might be considered an infection of the gallbladder.

In doubtful cases, if we can use the refinements indicated, it will save us from making mistakes, and we will know better where to make the incision. Graham has brought out something which is valuable. For that reason I believe that whoever sees Graham work and hears him talk, will find it to his advantage, and will agree that it is worth while to take a little time. There is no great hurry.

What is the common practice? In the hospitals every place I have been, patients frequently come in in the evening and are operated on the next morning, or the second day. Time is not taken in doubtful cases to examine the patient properly, and we may run across these complications unarmed to take care of them as we should. I think we cannot afford to neglect the things which Science is bringing to our aid.

It is important to give close attention to the safety of the patient along the lines I have tried to indicate. I could not go into all the side lines. I tried to confine myself to the title of my paper.

MODERN ASPECTS OF NUTRITION

THE PATHOLOGY OF MALNUTRITION

8. Food with Reference to the Acid-Base Equilibrium—Continued.

Victor E. Levine, M. A., Ph. D.,
Professor of Biological Chemistry and Nutrition, College of Medicine,
Creighton University, Omaha, Nebraska.

SIGNIFICANCE OF THE TERM ACIDOSIS

The term acidosis was originally invented by Naunyn to apply to the ketosis of diabetes. It has now come to be used in a much broader sense. Instead of acidosis we sometimes hear the word acidemia. Both words, however, bear a wrong connotation, for the blood in acidosis rarely goes below a pH of 7. and is therefore very rarely truly acid. The term acidosis, however, has become so popular that it would be of no avail at present to attempt to recommend one more fitting. What we really mean when we speak of acidosis is one of two conditions. Either the alkali reserve of the blood is diminished and the pH is still normal (compensated acidosis), or the alkali has decreased and the pH has shifted from the alkaline normal of 7.35 or 7.4 towards the acid side (uncompensated acidosis). Thus, a blood with a pH of 7.2 is still alkaline, but the drop from pH 7.4 to pH 7.2 represents a condition of acidosis. As we have already pointed out, neither the pH nor the alkali reserve alone gives a true picture of the acid-base equilibrium of the blood. To comprehend dynamically the status of the blood in reference to acid-base adjustment, we should determine the CO_2 combining power (alkali reserve) as well as the hydrogen ion concentration.

The alkali reserve of the blood is expressed in terms of bicarbonate. In the method of Van Slyke, carbon dioxide is blown through plasma. The CO_2 converts the alkali present to the form of bicarbonate. This compound is not measured directly but through the CO_2 which it holds chemically, and which is liberated by the addition of acid. Normal blood yields bicarbonate equivalent to 77 to 53 c. c. of carbon dioxide per 100 c. c. of blood. In moderate acidosis the bicarbonate is diminished so that it now yields 40 to 30 c. c. of CO_2 per 100 c. c. or 40 to 30 volume per cent. In severe acidosis, figures below 30 volume per cent are obtained.

THE DETERMINATION OF AN ACIDOSIS

A number of different methods are more or less in use as criteria for the degree of acidosis. They seek to determine the following: (1) lowered carbon dioxide combining power or content of the blood; (2) lowered alveolar carbon dioxide tension; (3) decreased affinity of hemoglobin for oxygen; (4) reduced alkalinity of the blood (Sellard's test); (5) increased hydrogen ion concentration of the blood; (6) increased intensity of urinary acidity (hydrogen ion concentration); and (7) the retention of alkali by the body, when the kidney is capable of rapidly excreting an excess of alkali. Yandell Henderson(13) has suggested holding the breath as a test. A normal person can hold the breath 30 to 40 seconds without an especially deep respiration, but the period is less for a person with acidosis. The severer the acidosis the less the holding time.

There are two criteria which are often used to signify a state of acidosis. One involves the acidity or alkalinity of the urine; the other, the presence of acetone bodies in the urine. Recent investigation brings out the fact that neither the reaction of the urine nor the occurrence of acetone bodies reflects the actual condition of the blood in reference to acid-base balance.

THE REACTION OF THE URINE NOT A SAFE GUIDE TO AN EXISTING STATE OF ACIDOSIS

It is customary to use the reaction of the urine as a guide for the therapeutic administration of sodium bicarbonate. Probably in a great majority of cases this is so. We must bear in mind, however, that we occasionally encounter an individual who, because of some kidney insufficiency, does not readily excrete alkali. In such case the reaction of the urine cannot be a safe criterion. To lend concreteness to this point, we will cite the data of two patients reported by Myers and Booher(14). These patients were receiving alkali therapy. Their urine was decidedly acid, while at the same time the blood showed a condition of alkalosis.

Case	Date	Blood		Urine	Remarks
		pH	CO_2 Content	pH	
M. J.	2/26	7.50	63	Less Than 5.20	Acute nephritis receiving small amounts of sodium bicarbonate.
	2/27	7.51	61		
	2/28	7.48	52		
A. W.	4/12	7.55	62	5.21	laparotomy receiving sodium bicarbonate

THE PRESENCE OF ACETONE BODIES IN URINE NOT DIAGNOSTIC OF AN ACIDOSIS

The other criterion, the presence of acetone bodies, is as unreliable as that of the urinary reaction. Booher and Killian(15) report abnormally large quantities of ketone bodies in the blood associated with uncompensated alkalosis due to alkali therapy or due to loss of hydrochloric acid through vomiting. In the cases reported acetone was found in the urine, and the values for acetone in the bloods examined were 60, 50, 66, 28, and 8 mgs. per 100 cubic centimeters. One is tempted to burst forth with a diagnosis of a condition of acidosis, were it not for the fact that the pH values of the bloods as well as the bicarbonate contents represented a distinct alkalosis. The pH values were 7.58, 7.54, 7.50, 7.52, 7.50, while the bicarbonate contents were represented by such figures as 84, 83, 88, 87, and 70, respectively. Furthermore, it is to be remarked that the administration of sodium bicarbonate itself leads to the production of acetone bodies. Haldane(16) in 1923, has shown that if large doses of sodium bicarbonate (0.6 gram per kilogram of body weight) is fed to normal subjects receiving normal diets, the metabolism of glucose is depressed, and acetone bodies appear in the urine. Hubbard and Wright(17) in 1924, have confirmed these results. They maintained a subject at the borderline of ketosis, and found that administration of therapeutic doses of sodium bicarbonate caused the production of beta-hydroxybutyric acid, diacetic acid, and acetone.

THE PREVALENCE OF ACIDOSIS

It is not a sweeping statement to maintain that all forms of severe illness are complicated at some time or other by an acidosis. It is by no means a condition occurring only in nephritis or diabetes. It is an accompaniment of diseases involving cirrhosis of the liver. It is present in severe fever. In fact, it is a terminal stage in every wasting disease, like cancer or tuberculosis. Toxic decomposition products resulting from severe burns, from surgical shock, and from accidental trauma give rise to acidosis. So do also such substances as methyl alcohol, salicylates, morphine, phosphorus, insulin and the anaesthetics, ether and chloroform.

ACIDOSIS RESULTING FROM DIMINISHED OXIDATION

Diminished power of oxidation results in the incomplete burning of biologic fuel with the formation of acid compounds. Thus, much lactic acid is produced during oxygen deficiency. It follows, therefore, that any condition tending to interfere with the supply, transport or utilization of oxygen induces acidosis. Breathing air containing too little oxygen, as in carbon monoxide poisoning, or mechanical blocking of the respiratory passage would produce acidosis. This condition also results in the event of a lowered vital capacity, failure of respiration or of the circulation, as in cardiac decompensation. Diminished oxygen-carrying power of the blood, as in the primary or secondary anemias, due to hemorrhage or disease, is also a circumstance fruitful of acidosis.

ACIDOSIS COMPLICATING MALNUTRITION

Disturbances in nutrition are also productive of acidosis. This condition may come from failure to receive adequate nutrition or inability to retain food, as in hysteria, persistent vomiting, and in diseases of the esophagus and stomach. Infantile diarrhea may be accompanied by marked acidosis. According to Howland and Marriott(18), the acidosis found in many cases of severe diarrhea not of the ileocolitis type is apparently due to deficient excretion of acid phosphate by the kidneys, as in the case of nephritis. Moore(19) found in diarrhea without ileocolitis only a very moderate increase in acetone bodies in the blood, while with ileocolitis the amount of acetone bodies was very large.

DEFICIENCY IN CARBOHYDRATE AS A CAUSE OF ACIDOSIS

Faulty food may often be the cause of acidosis. A diet with carbohydrate insufficient to metabolize fat gives rise to hydroxybutyric acid and to diacetic acid, which cut into the alkali reserve. This ketonic acidosis is observed especially in starvation, in carbohydrate-poor or carbohydrate-free diets, and in diabetes. Since it is extremely important to have a basic comprehension of the cause of this type of acidosis, we intend to leave a more detailed discussion of it for a paper soon to come.

EXCESS OF FAT AS A CAUSE OF ACIDOSIS

It has been shown that fats in excessive amounts or even in ordinary amounts produce soap stools in infants and children. According to Keller(20), the urine of such infants has a higher content of ammonia than normally. Steinmetz found a negative balance for sodium and potassium. The excretion of these elements diminished slightly in the urine, but increased greatly in the stool. In chronic nutritional disturbances increased fat caused a negative balance for calcium, according to the work of Rothberg(22). Similar results were obtained for magnesium by Birk(23). These findings were corroborated by Keller(24), Freund(25), Bahrdt(26), and Givens(27). Sawyer, Bauman and Stevens(28) studied the effect of fat on the mineral metabolism of two children. When they substituted fat in their control diets for an equal number of calories of carbohydrate, acidosis was produced. The alkali reserve was 50 and 49 volume per cent on the normal diets, but on the experimental fat diets it was reduced to 29 and 37 volume per cent. The acidosis caused by fat, producing a soapy stool, is due to three factors: increased acid, resulting from the digestion of fat, and the consequent formation of fatty acid; diminished acid elimination in the urine; diminished acid excretion in the feces. The elimination of soaps causes a loss of bases, leaving the body richer in acids.

ACIDOSIS ASSOCIATED WITH DEFICIENCY DISEASE

With reference to the deficiency diseases, a number of investigators have reported on the occurrence of acidosis. Takahiro(29) has proven that the hydrogen ion concentration of extracts of the heart and blood vessels of birds with polished rice disease was always higher than that of control animals, and that the acidity increased with the severity of the symptoms. Hess and Killian(30) showed in scurvy a lessening of the combining power of the blood for carbon dioxide. Dodds(31) called attention to acidosis in rickets. In pellagra several investigators(32) found no acidosis, but a recent British report(33) of a committee of inquiry regarding the prevalence of pellagra among Turkish prisoners of war did observe the existence of a state of acidosis.

There are many factors favoring acidosis which operate in the case of the malnourished. The lack in the diet of base-producing foods may sometimes be the fault. With reference to circulatory causes of acidosis, it may be said that a state of anemia complicates all form of malnutrition. Chlorosis is an iron deficiency, and scurvy is characterized by a widespread hemorrhagic tendency. In this connection, it is not to be overlooked that in the deficiency diseases the individual may also be rendered acidotic by cardiac embarrassment and by edema. Furthermore, proof is accumulating that protein excess or food deficient in one or more respects leads to impairment of kidney function and to the subsequent development of acidosis. Thus, Gerstenberger(34) reports that oliguria is quite characteristic of scurvy. Lust and Klocman(35) found in the same disease retention of inorganic components.

ACID-BASE BALANCE UNDER PHYSIOLOGICAL CONDITIONS

Not only pathological conditions but also physiological ones may show change in acid-base balance. In the latter case, however, the condition is more or less temporary. Ingestion of food stimulates the output of gastric juice. One hydrogen ion of the sodium dihydrogen phosphate of the blood is removed to produce hydro-chloric acid. This removal renders the blood more alkaline, and the excessive alkali is eliminated by the kidney. The urine, therefore, during the meal or right after, may be alkaline. This condition of the urine, induced by food intake, is spoken of as the alkaline tide. Physical exercise may lower the alkali reserve of the blood and increase the H-ion concentration. According to Rabbeno(36), the alkalinity of the blood is lowered after prolonged sea-bathing, but particularly after swimming. This is due to the increased respiratory activity during which both the CO_2 contents of the blood and the CO_2 capacity are diminished. Weisman-Netter(37) reports a state of compensated acidosis during the premenstrual period. External heat, according to Pemberton(38), heightens the blood flow, increases metabolism, causes an increase in the elimination of acids, chiefly carbonic acid. Its removal leaves an excess of alkali in the blood, changing its reaction. In an effort at compensation the excess of alkali in the blood is eliminated through the sweat and urine. Forced breathing, high altitudes, and cold baths also induce an alkalosis.

FOOD IN RELATION TO ACID-BASE EQUILIBRIUM

The acid-base balance of the body is governed by the intake of potential acids and bases in the food and their removal through the channels of excretion. A food may have two types of acid substances. One type of acidity is that due to the presence of organic acids, which can readily be tested for by suitable indicators. Thus, lemons and tomatoes contain citric acid; grapes, tartaric acid; apples, malic acid. Besides the organic acids, foods contain inorganic elements like sulphur, phosphorus, chlorine, sodium, potassium, calcium and magnesium. Sulphur, phosphorus and chlorine form respectively sulphuric, phosphoric and hydrochloric acids, and they are, therefore, known as acid-forming elements. Sodium, potassium, calcium, and magnesium form respectively sodium, potassium, calcium and magnesium hydroxide, and they are on that account regarded as base-forming elements. These elements are not found in the food in the form of free acid or free base, but since they have the power to form acid or base they represent potential acidity or alkalinity.

DETERMINATION OF POTENTIAL ACIDITY OR ALKALINITY

To determine the potential acidity or alkalinity of a food we analyze for sulphur, chlorine, phosphorus, calcium, magnesium, sodium and potassium. The figures for sulphur, phosphorus and chlorine are calculated to their equivalents of normal sulphuric, phosphoric or hydrochloric acid. The number of cubic centimeters of normal acid is finally totalled. The sodium, potassium, calcium and magnesium figures are also calculated in terms of normal sodium, potassium, calcium or magnesium hydroxide, and the total normal alkali figured out. A food possesses a potential acidity if the values for normal acid exceeds that of normal alkali, or a potential alkalinity if the value for the alkali is greater than that for the acid. The actual potential acidity or alkalinity is calculated by the difference between the normal acid and alkali. We can with reason substract the acid and base figures from one another, for 1 c. c. of normal acid is equivalent to 1 c. c. of normal alkali.

Keeping this method of estimating in mind, we can readily see how Sherman and Gettler(39) determined the potential acidity or alkalinity of various foods. The table following is a compilation of the data of Sherman and Gettler and those of others. Forbes (40) has also published a table of calculations of acid-base values of foods. The most complete data, however, are those of Berg(41).

EXCESS OF ACID OR BASE IN TERMS OF NORMAL SOLUTION PER 100 GRAMS

Articles of Food	Acid c. c.	Base c. c.
Meat:		
Beef, lean	13.91	
Beef, lean	10.05	
Beef, lean	13.67	
Chicken	17.01	
Pork, lean	11.87	
Veal	13.52	
Rabbit	14.80	
Venison	15.83	
Fish:		
Pike	11.81	
Haddock	16.07	
Dairy Products:		
Milk, cow's		2.37
Milk, cow's		1.26
Eggs	11.10	
Egg white	5.24	
Cereals:		
Oatmeal	12.93	
Oatmeal	10.63	

Articles of Food	Acid c. c.	Base c. c.
Cereals:		
Corn, sweet dried	5.95	
Rice	8.10	
Rice	8.35	
Wheat, entire	9.66	
Wheat, entire	12.39	
Wheat, flour	11.61	
Crackers	7.81	
Vegetables:		
Asparagus		0.81
Beans, dried		23.87
Beans, dried		11.58
Beans, lima, dried		41.65
Beets		10.86
Cabbage		4.34
Cabbage		7.10
Carrots		10.82
Cauliflower		5.33
Celery		7.78
Lettuce		7.37
Peas, dried		3.36
Peas, dried		7.07
Potatoes		7.19
Potatoes		5.50
Potatoes		7.72
Radishes		2.87
Turnips		2.68
Turnips		6.80
Fruits:		
Apples		3.76
Bananas, dried		5.56
Cherry juice		4.40
Currants, dried		5.97
Lemons		5.45
Muskmelon		7.47
Oranges		5.61
Peaches		5.04
Prunes		24.40
Prunes		25.55
Raisins		23.68
Raspberry juice		4.91
Nuts:		
Almonds		12.38
Almonds		11.76
Chestnuts		7.42
Peanuts	3.9	

The figures before us present many interesting considerations. They tell us that animal products—meat and fish—contain inorganic matter preponderatingly rich in acid-forming elements, in chlorine, sulphur and phosphorus. Milk is alkali-forming, but eggs are acid-forming. Cereals are acid-forming, but vegetables, fruits and most nuts are base-forming. They are very rich in sodium, potassium, calcium and magnesium. While vegetables and fruits are acid to indicators, the organic acids they contain are oxidized to carbon dioxide and water. This fact explains the seeming paradox of an acid food yielding an alkali-bearing ash. It is interesting to note that alkali is an Arabic word meaning marine plants. Certain fruits, however, like cranberries, prunes and plums yield a basic inorganic residue, but they, nevertheless, serve to increase the acidity of the urine, because the acid they contain is benzoic acid, which does not oxidize to carbon dioxide and water. What it actually does is to conjugate in the body with amino-acetic acid or glycocol to produce hippuric acid.

So far as diet is concerned, the consensus of opinion holds that food should contain sufficient base-forming elements to neutralize the acid produced in the course of metabolism. If these acids are not cared for by the base-forming elements in the food, fixed bases of the tissues may be called into the process neutralization.

CHANGES IN pH=(pH) AND TITRATABLE ACIDITY DUE TO FOOD

Blatherwick(42) has proven that the acidity of the urine, both the actual acidity (pH) and the titratable acidity, depend upon the type of diet. A base-forming diet reduces the acidity; an acid-forming diet increases it. Page(43) has shown that the alkali reserve of the blood can be increased by a base-forming diet. Clinicians often give sodium bicarbonate, sodium acetate, or potassium citrate, in a condition of acidosis. The use of alkali is open to many important objections and these we shall enumerate at some later date. The use of alkaline drugs is physiologically unsound. Any therapeutic measure that does not harmonize with proven physiological principles is of questionable value, even in the face of apparent clinical results. Better and more lasting effects in the treatment of acidosis are to be secured by feeding properly selected base-forming foods. Similarly, feeding acid-forming foods increases the acidity (pH and titratable acidity), and should dispense with the use of sodium dihydrogen phosphate for the same purpose. A highly acid urine causing irritation to the skin, and the highly acid urine in cystitis and pyelitis can be brought down in acidity by means of food. The acidosis of nephritis and diabetes is also amenable to dietetic treatment.

ACID-BASE EQUILIBRIUM IN THE TREATMENT OF LEAD POISONING

The treatment of chronic lead poisoning has taken on a new aspect since the discovery of the fact that a diet rich in acid-forming foods, taken together with acid, aids markedly in the elimination of lead. This metal is a common source of chronic poisoning. Such poisoning may be detected, according to Hayhurst(44), by moistening with 10 per cent sodium sulphide the face, arm, chest or preferably a spot not bathed frequently. In a state of lead intoxication, the skin becomes black or grayish-black due to the formation of the sulphide. Lead is absorbed more readily through the respiratory tract and through the gastro-intestinal tract. Carried in the blood stream as a phosphate, the element is finally stored in the calcareous portion of the bones. The character of the poisoning changes during starvation. Acute symptoms develop, and the lead distributes itself more generally throughout the body than is typical of a chronic condition. This fact lead Aub, Minot, Fairhall, and Reznikoff(45) to believe that the acidosis characterizing starvation causes the setting free of lead from the bones. Putting this belief to test, these investigators have found that the giving of large quantities of acid and the feeding of foods, acid-forming and poor in calcium, produced a marked increase in the excretion of lead. This treatment does not alter the amount removed with the urine. The increase, however, appears in the feces.

INCREASED ELIMINATION OF LEAD AS A RESULT OF ACIDOSIS

The reason for the increased elimination of lead is now attributed to the existence of an acidosis. Lead is deposited in a skeleton in the form of tertiary lead phosphate. This compound is least soluble at a normal hydrogen ion concentration of the body, but it is more easily dissolved under conditions more acid or alkaline. When acid and acid-forming food are ingested, the reserve of alkali in bone is called upon by the body, and as a result the lead is removed with the calcium. The removal of the lead is made possible by local changes in hydrogen ion concentration, which make possible its conversion into the more soluble di-lead phosphate.

The excretion of lead is also increased by alkali. However, the average increase in the excretion of lead during acid ingestion is fourfold, while during sodium bicarbonate treatment, it is only about double. The elimination of lead also bears some definite relation to calcium, for a high calcium intake produces simultaneously a calcium balance, and a rapid diminution in the excretion of the heavy metal.

Lead stored in the bones seems to produce little physiological damage. The toxicological effects show up either during its transportation after absorption or during its release from its anchorage in the bones. In order to store lead in the bone and to prevent it from entering the circulation, it is only necessary to give a diet containing much calcium. To obtain this result it is necessary to fortify the diet with fairly large quantities of milk. By the use of this dairy product a positive calcium balance is produced, which favors the harmless storage of lead. The calcium-rich diet, however, does not prevent the absorption of lead.

DIETETIC TREATMENT OF LEAD POISONING

We now come to comprehend the most rational and the most efficient treatment for lead poisoning. The objective to be striven for is the final removal of the lead. Excess of calcium in the diet favors the retention of this element. The diet should therefore be low in calcium. The retained lead is insoluble, but can be rendered soluble by swinging the reaction of the biologic environment either to the acid or alkaline side. Since the acid side of the fence is more favorable to the elimination of lead, we shall choose a diet rich in acid-producing elements, such as meat, bread. fore, contain a preponderance of food rich in acid-producing elements such as meat, bread, rice and macaroni. Apples, bananas and oranges, although base-forming, are to be added for their vitamin content. Sugar and butter should be included. These are foods that have but little influence on the acid-base balance. Milk, eggs, green vegetables and fruits not included in the list should be avoided. These are either too rich in calcium or would tend to make the diet base-forming.

To render the diet still more acid ten doses of 20 to 25 c. c. of dilute phosphoric acid are given. This is sweetened and diluted to make it taste like lemonade. The concoction can be made more palatable by the addition of some gin. To avoid drinking large and disagreeable quantities of sour fluid, the patient may substitute for the phosphoric acid 8 to 12 grams of ammonium chloride a day. The ammonium chloride is said to be broken up in the system with the formation of hydrochloric acid. Magnesium sulphate given alone does not increase the excretion of lead, but it does relieve the spasm which is responsible for colic. Besides acid, potassium iodide also stimulates lead excretion. The iodide causes lead to appear in the urine and feces where none has been found before its use. It is not, however, nearly as efficacious an agent as acid.

ACID-BASE BALANCE WITH REFERENCE TO INSULIN

Nutrition is an important factor in the utilization and in the toxic manifestation of insulin. Bodansky and Simpson(46) have observed that insulin hypoglycemia is not as intensive in fat as in lean subjects. Joslin, Gray, and Root(47) have reported that children and adults, weakened and dessicated especially by diarrhea, are prone to develop dangerous hypoglycemia even with small amounts of insulin. Abderhalden and Wertheimer(48) have observed that rats on carbohydrate-free diet react less violently than those on a mixed diet of carbohydrate, fat and protein. The beneficient results of glucose on insulin hypoglycemia do not harmonize with the findings of the German workers with reference to carbohydrate-free diet. Very recently Vogetlin, Dunn and Thompson(49) stated that the mode of action of insulin not only involved carbohydrate but also protein and fat. They found that glucose, fructose, maltose, sucrose and trehalose, as well as glycerol and the amino acid, alanine, serve as effective physiological antagonists.

The characteristic convulsions induced by insulin depend upon faulty diet and not upon an immediate state of hypoglycemia. Levine and Kolars(50) found that rabbits invariably have convulsions on a diet of alfalfa, but not on oats and cabbage. Blatherwick, Long, Bell, Maxwell and Hill(51) fed one set of rabbits alfalfa and another set afalfa and crushed barley. Alfalfa is base-forming, while a mixture of alfalfa and crushed barley is acid-forming. On the former diet convulsions were observed, but not on the latter. Abderhalden and Wertheimer(48) were also able to bring about convulsions with the base-forming food, alfalfa, but not with the acid-forming substance, oats. The tendency of the investigators mentioned is to attribute inability to induce convulsions to the potential acidity of the diet. Page(43) finds that rabbits on base-forming diets show a lower fall in blood sugar after insulin injection than those on acid diet. Bricker(52) reports that a hypoglycemia is produced in rabbit blood by an introduction of an excess of hydroxyl ions, and conversely a hyperglycemia follows an excess of hydrogen ions. Perhaps any factor that will aid glycogenolysis, such as acidosis, will tend to render the organism less susceptible to the toxic effects of insulin.

TOXICITY AND ITS RELATION TO DIET

That toxicity is related to diet is well known. Salant and Swanson(53) found that the resistance of rabbits to sodium tartrate could be markedly increased or decreased by dietary changes. Levine and Hubenka(54) observed that sodium salicylate is much more toxic to rabbits on alfalfa than on oats and fresh cabbage. We maintain that variation in the toxic manifestations of insulin and other substances are directly related to the greater or lesser adequacy of the diet under observation. In the case of insulin the tendency to convulsions on certain diets may be attributed to the fact that animals on faulty diet undergo marked pathological changes in the nervous system. That inadequate food is conducive to alterations in the nervous mechanism may be seen from a study of diseases, the etiology of which lies in malnutrition, such as beri-beri(55), scurvy(56), pellagra(57). Levine and Kolars observed convulsions with alfalfa but not with oats and cabbage, although Abderhalden and Wertheimer induced this condition with oats alone. Blatherwick and his associates brought about the convulsive state with alfalfa, but not with alfalfa and crushed barley. Alfalfa or oats alone is quite inadequate. However, alfalfa supplemented with barley, or oats supplemented with cabbage, is indeed more adequate. A mixture of leaf and seed is able, according to McCollum, to supplement the deficiencies of one another.

From a clinical standpoint it is important to study further the relation of diet to insulin. Why some patients prove altogether refractory to this hormone treatment may prove to be a problem of diet. Perhaps the exact amount of carbohydrate that may be utilized by a definite quantity of insulin depends upon some one or more dietary factors.

ACID-BASE BALANCE WITH REFERENCE TO PRACTICAL APPLICATION

The concept of acid or alkali diet is gaining a wide acceptance in medical practice. Alkaline diets are indispensable to infants where growth is rapid. Their use is very strongly indicated in pregnancy and in lactation, and has already been mentioned in cutting down the acidity of the urine or in combatting a general acidosis. From Chittenden's studies(58) it seems that on alkaline diets the body is capable of more sustained effort than on acid diets. However, it must be said that in some quarters the alkaline diet is not regarded as a physiological necessity. This is the opinion of Greenwald(59), and of Lamb and Evvard(60). It seems to the writer that they overlook the fact that an alkaline diet cannot produce the best results unless it is adequate in all other respects. Looked at from the angle of completeness, a given acid diet may sometimes prove better than a given basic diet, for the simple reason that the former may be endowed with a more favorable supply of nutriments.

That acid-forming diets have a useful therapeutic field may be seen from the fact that they have proved beneficial in the treatment of lead poisoning, in infantile tetany, and in rickets. As a matter of fact, the idea of acid-base equilibrium is one of the most important concepts in pediatrics, and in our next paper we shall devote our efforts to show the application of this principle to the treatment of tetany and rickets, as well as to the newer and more efficient methods of artificial feeding.

BIBLIOGRAPHY

1. Hinhede, M. Nahrungsmittelverbrauch Danischer Familien. Munchen medizinische Wochenschrift, 1915, 28, 948; Deutsche Medizinische Wochenscrift, 1919, 45, 1236.

2. Van Slyke, D. D. The carbon dioxide carriers of the blood. Physiological Reviews, 1921, 1, 141.

3. Henderson, Y. Physiological regulation, the acid-base balance of the blood and some related functions. Physiological Reviews, 1925, 5, 131.

Henderson, J. L. Ergebnisse der Physiologie, 1909, 8, 254; Oxford Medicine, 1919, 1, 471; Journal of Biological Chemistry, 1911, 9, 403; 1920, 41, 401; 1921, 46, 411.

Henderson, J. L., and Palmer, W. W. Journal of Biological Chemistry, 1912-13, 13, 393; 1913, 14, 81; 1914, 17, 305; 1915, 21, 37.

Henderson, Y. American Journal of Physiology, 1908, 21, 126.

Henderson, Y., and Haggard, H. W. Journal of Biological Chemistry, 1918, 23, 355; Journal of Physiology, 1920, 51, 176.

4. Wilson, D. W. Neutrality regulations in the body. Physiological Reviews. 1923, 3, 295.

5. Shohl, A. T. Mineral metabolism in relation to acid-base equilibrium. Physiological Reviews, 1923, 3, 509.

Van Slyke, D. D., and Cullen, G. E. Studies of Acidosis. The bicarbonate concentration of the blood plasma; its significance and its determination as a measure of acidosis. Journal of Biological Chemistry, 1917, 30, 289.

6. Barr, D. P., Himwich, H. E., and Green, R. P. Studies in the physiology of muscular exercise. 1. Changes in acid-base equilibrium following periods of vigorous muscular exercise. Journal of Biological Chemistry, 1923, 55, 495.

7. Davies, H. W., Haldane, J. B. S., and Kennway, E. L. Experiments on the regulation of the blood's alkalinity. Journal of Physiology, 1922, 56, 269.

8. Hasselbach, K. A., and Lundsgaard, C. Blutreaktion und Lungenventilation. Skandinavische Archiv fur Physiologie, 1916, 74, 1.

9. Van Slyke, D. D., Austin, J. H., and Cullen, G. E. The effects of ether anaesthesia on the acid-base balance of the blood. Journal of Biological Chemistry. 1917, 30, 289.

10. Dale, H. H., and Evans, C. L. Effect on the circulation of changes in the carbon dioxide content of the blood. Journal of Physiology, 1922, 56, 125.

11. Rous, P., and Drury, D. R. Outlying acidosis. Journal of the American Medical Association, 1925, 85, 33.

12. Ylppo, A. Neugeborenen, Hunger und Intoxikationsacidosis in ihren Beziehungen. Zeitschrift fur Kinderheilkunde, 1916, 14, 268.

13. Henderson, Y. The time that the breath can be held as an index for acidosis. Journal of the American Medical Association, 1914, 63, 318.

14. Myers, V. C., and Booher, L. E. Observations on the excretion of an acid urine in alkalosis. Proceedings of the Society for Experimental Biology and Medicine, 1925, 22, 512.

15. Booher, L. E., and Killian, J. A. Ketosis associated with conditions of alkalosis. Proceedings of the Society for Experimental Biology and Medicine, 1924, 21, 528.

16. Haldane, J. B. S. Influence of hydrogen ion concentration changes on human metabolism. Abstracts of communications to the 11 International Physiological Congress held at Edinborough, July 23-27, 1923. .

17. Hubbard, R. S., and Wright, F. R. An experiment on the effect of sodium bicarbonate and of intarvin on the excretion of acetone. Proceedings of the Society for experimental Biology and Medicine, 1924, 22, 70.

18. Howland, J., and Marriott, W. Mck. Acidosis occurring with diarrhea. American Journal of Diseases of Children, 1916, 11, 309; a discussion of acidosis, with special reference to that occurring in diseases of children. Bulletin Johns Hopkins Hospital, 1916, 27, 63.

19. Moore, F. Acetone bodies in the blood of children. American Journal of Diseases of Children, 1916, 12, 244.

20. Keller, A. Zur Kenntnis der chronischen Ernahrungsstorung der Sauglings. Centralblatt fur allgemeine Pathologie und pathologische Anatomie, 1898, 81, 947.

21. Steinitz, F. and Weigert, R. Uber die chemische Zusammensetzung eines ein Jahr alten atrophischen und rachitischen Kindes. Monatschrift fur Kinderheilkunde, 1905, 4, 301.

22. Rothberg, O. Uber den Einfluss der organischen Komponenten (Eiweiss, Fett, Kohlehydrate) auf den Kalkumsatz kunstlich genahrter Sauglinge. Jahrbericht fur Kinderheilkunde, 1907, 46, 69.

23. Birk, W. Beitrage zur Physiologie des neugeborenen Kindes. Monatschrift fur Kinderheilkunde, Orig., 1910, 9, 595.

24. Keller, A. Zur Kenntnis der chronischen Ernahrungsstorung der Sauglinge III Fettumsatz und Azidose, Monatsschrift fur Kinderheilkunde, 1902, 1, 234.

25. Freund, W. Physiologie und Pathologie des

Fettstoffwechsels im Kindesalter. Ergebnisse der inneren Medizin und Kinderheilkunde, 1919, 3, 139.

26. Bahrdt, H. et al. Untersuchungen uber die Pathogenese der Verdauungstorungen im Sauglingsalter. 1-VIII Zeitschrift fur Kinderheilkunde, 1912, 4, 534; 1912-13, 5, 475; 1914, 11, 143.

27. Givens, T. H. Studies in calcium and magnesium metabolism III. The effect of fat and fatty acid derivatives. Journal of Biological chemistry, 1917, 31, 421.

28. Sawyer, M., Bauman, L., and Stevens, F. Studies of acid production II. The mineral loss during acidosis. Journal of Biological chemistry, 1918, 33, 103.

29. Takahiro, M. H-ion concentration of extracts of the heart and blood vessels of birds with polished rice disease. Japan Medical World, 1922, 2, 50.

30. Hess, A. F., and Killian, J. A. Chemistry of blood in scurvy. Proceedings of the Society for Experimental Biology and Medicine, 1918, 16, 1643; Journal of the American Medical Association, 1919, Aug. 23.

31. Dodds, E. C. Evidence of pancreatic disorder in rickets. British Medical Journal, 1922, 1, 54.

32. Sullivan, M. X., and Stanton, R. E. The alkali reserve in pellagra, Archives of Internal Medicine, 1920, 26, 40.

Fairbanks. Texas State Medical Journal, 1916, 21, 170.

Carmichel. Citation from Jobling and Maxwell.

Jobling, J. W., and Maxwell, E. S. The alkali reserve in the blood of pellagrins. Journal of the American Medical Association, 1917, 69, 2026.

33. Report of a Committee of Inquiry regarding the prevalence of pellagra among the Turkish Prisoners of War. 1918, Section 8, p. 36.

34. Gerstenberger, H. J. Pathogenesis of infantile scurvy. American Journal of Medical Sciences, 1918, 155, 253.

35. Lust, F., and Klocman, L. Stoffwechsel der Barlouschen Krankheit. Zeitschrift fur Kinderheilkunde, 1914, 75, 663.

36. Rabbeno, A. Sull'azione del bagno di mare sulla reazione del sangue. Atti d.r. Accid, Lincei (Rend.), 1925, 1, 96.

37. Weismann-Netter, R. Comptes rendus de la societe de biologie, 1925, 92, 339.

38. Pemberton, R. Effects of external heat upon the human body. American Journal of the Medical Sciences, 1925, 169, 485.

39. Sherman, H. C., and Gettler, A. O. The balance of acid-forming and base-forming elements in foods. Journal of Biological Chemistry, 1912, 11, 323.

40. Forbes, E. B. The balance between inorganic acids and bases in animal nutrition. Ohio Agricultural Experiment Station Bulletin, 1909, CCVI, 23.

41. Berg, R. Die Nahrungs-und Gerussmittel; ihre Zusammensetzung, mit besonderer Berucksichtigung der Aschenbestandteile, Dresden, 1913.

42. Blatherwick, N. R. The specific role of food in relation to acid-forming and base-forming elements in foods. Archives of Internal Medicine, 1914, 14, 409.

43. Page, I. H. Influence of diet on the alkaline reserve and insulin hypoglycemia in rabbits. American Journal of Physiology, 1923, 66, 1.

44. Hayhurst, E. R. See discussion at end of next paper: Aub: Minot, Fairhall and Reznikoff.

45. Aub, J. C., Minot, A. S., Fairhall, L. T., and Reznikoff, P. Treatment of lead poisoning. Recent investigations of the absorption and excretion of lead in the organism. Journal of the American Medical Association, 1924, 83, 588.

46. Bodansky, A. and Simpson, S. A study of the reaction of normal human subjects to intravenous injections of insulin. Proceedings of the Society of Experimental Biology and Medicine, 1924, 21, 280.

47. Joslin, E. P., Gray, H., and Root, H. F. Insulin in hospital and home. Journal of Metabolic Research, 1922, 2, 65.

48. Abderhalden, E., and Wertheimer, E. Ueber den Einfluss der Ernahrung auf die Wirkung des Insulins. Archiv fur die gesamte Physiologie, 1924, 203, 439.

49. Vogetlin, C., Dunn, E. R., and Thompson, J. W. The antagonistic action of certain sugars, amino acids and alcohols on insulin intoxication. American Journal of Physiology, 1925, 1925, 715, 574.

50. Levine, V. E. and Kolars, J. J. The effect of insulin on the morphological blood picture, together with a note on the relation of insulin to diet. American Journal of Physiology. In press (Nov., 1925).

51. Blatherwick, N. R., Long, M. S., Bell, M., Maxwell, L. C., and Hill, E. American Journal of Physiology, 1924, 69, 155.

52. Bricker, E. M. The diabetic problem. Biochemical Journal, 1924, 154, 328.

53. Salant, W. and Swanson, A. M. Further observations on the influence of diet on the toxicity of sodium tartarate. Proceedings of the Society for Experimental Biology and Medicine, 1916, 14, 100.

54. Levine, V. E., and Hubenka, A. J. The effect of diet on the toxicity of salicylates. Unpublished communication.

Rous, P. and Drury, D. R. Outlying acidosis. Journal of the American Medical Association, 1925, 85, 33.

55. Funk, C. The Vitamines. Williams and Wilkins, Baltimore, 1922, P. 292.

56. Funk, C. The Vitamines. Williams and Wilkins, Baltimore, 1922, p. 309.

57. Funk, C. The Vitamines. Williams and Wilkins, Baltimore, 1922, p. 357.

58. Chittenden, R. H. The nutrition of man, New York, 1907.

59. Greenwald, I. A. Normal Diet, In: Endocrinology and Metabolism, edited by E. F. Barker, New York and London, 1922, III.

60. Lamb, A. R., and Evvard, J. M. Acid-base balance in animal nutrition. Journal of Biological Chemistry, 1919, 37, 317.

DIAGNOSIS OF WHAT?

Your back aches because:

"Kidneys," said the herb man.

"Prostate," said the G. U. doctor.

"Flat-foot," said the shoe doctor.

"Pelvic trouble," said the gynecologist.

"Infected teeth", said the dentist.

"Mal-adjustment," said the osteopath.

"Impinged nerves," assured the chiropractor.

"It don't ache," emphasized the Christian Scientist.

— Medical Herald.

SOME PHASES OF THE TUBERCULOSIS PROBLEM*

John F. Allen, M. D., Omaha, Nebr.

It is my intention to discuss a phase of the tuberculosis problem which is of common, every-day, practical importance—a phase with which the greater number of us are more or less directly concerned, in the actual practice of medicine in our various communities. It is not so actually essential that we be highly expert in the technicalities of diagnosis, that we be thoroughly familiar with the latest developments in the involved subject of immunity or with the investigations of research laboratories relative to the latest attempts at chemo-therapy. There are so many phases of the broad problem of tuberculosis, generally speaking, that it has become from the purely scientific standpoint one of the most intricate in all medicine.

My subject concerns the plain and possibly somewhat commonplace question of the treatment and management of the patient with open pulmonary tuberculosis. The death rate is decreasing, but consumption in the practice of medicine still remains a reality. After an unquestionable clinical and pathological condition has developed, has been recognized as such and the diagnosis certainly established, what should we do for the patient, and why, and how? Is our advice clearly and convincingly given and our supervision effectively directed? Are they effective in accomplishing all that might be accomplished? Is the full measure of responsibility assumed, that should be ours? Is there a clear, decisive appreciation of the clinical course of pulmonary tuberculosis and of the characteristics of the pathological process? In short do the most of us, unless our experience and thought is to some extent specially limited to the question, think, in terms of tuberculosis?

Pulmonary tuberculosis, to speak tritely, is more an industrial, economic and social problem than it is medical. A case of lobar pneumonia, in the rich or the poor, in one community or another, is an acute brief, medical problem. The economic, industrial and social situation is only temporarily disturbed and tends to adjust itself. It is handled from the doctor's standpoint purely as an emergency medical problem. Tuberculosis of the lungs is a prolonged, slow, pathological process in which the contest between the infection and the resistance of the human body may continue for years. The economic and industrial status of the patient is disturbed over an extended period and in the great majority of instances permanently. The patient's efforts to resist the disease and our efforts to prolong his life or restore him to normal activity are too often defeated by the economic necessities of existence. These economic obstacles lead us often into errors of judgment, to the giving of faulty advice, to compromise and possibly at times to insincerity. No policy in the management of tuberculosis can be more than temporarily effective or maintained in the best interests of the patient which is not based upon absolute honesty with reference to every detail. It is the height of absurdity to attempt to treat a patient for tuberculosis without informing the patient of the existence of the disease. This is occasionally requested by relatives, and I have known of instances where it was attempted.

It is to be understood and admitted that a certain definite percentage of victims of the disease will die in from one to four years of the time of the first knowledge of its existence, regardless of any and all efforts at treatment or control. It is probably fairly correct to say at the present time that forty to fifty per cent of all cases of pulmonary tuberculosis die within four years of the date of the first diagnosis. A certain percentage run a chronic low grade course and are able to live a modified existence for years, without treatment or special supervision. Their natural resistence is sufficient to hold the disease in abeyance.

The proposition of my paper is, briefly stated, that a quite considerable number of the forty to fifty per cent of early deaths would be prevented if patients were better advised and supervised from the beginning of the manifest onset of the disease. Favorable cases become hopeless because of a failure to understand. Their failure to understand is sometimes due to our failure to discharge our obligation by informing and advising them of the actual situation. We fail to think in terms of tuberculosis. We fail to meet the issue, of which we are many times conscious, but of which the patient is not. In early tuberculosis, a patient does not feel that he is seriously ill. The most of them do not think of death. The public has been taught that tuberculosis is curable. Most patients reason and think that their case is an early one. Many of them reason that by "taking good care of themselves" as they express it, with plenty of sleep and a lot of milk and eggs, by sleeping out-of-doors and by the observation of various other "health measures" they may continue to work and yet recover from the disease. The doctor must meet the issue and the situation without hesitation. By explanation and logical reasoning, he should direct the thought, the plans and the action of the patient experiencing his first breakdown with tuberculosis in order that he may have a chance while he has a chance. The cost of a funeral, which even those of the most meagre means meet somehow, is sufficient to defray cheap living expenses for a considerable time. If a public institution for tuberculosis is the only possible alternative, the patient had better enter, in a favorable condition with a chance of being discharged alive, than to go later as a hopeless case. Personally, I would much rather take care of a case for ten dollars a month for a year or two, where the distressing features of the disease have not developed, than to care for a dying patient at five dollars per call for thirty days.

---

*Read before the annual meeting Nebraska State Medical Association, Lincoln, May 12-14, 1925.

Pulmonary tuberculosis can be influenced and controlled as to course, duration and life, with more certainty and assurance than lobar pneumonia. We do not tell a patient ill with pneumonia that there is nothing that can be done or advise them to make an effort to raise enough money to buy a ticket to a more seductive climate; nor do we let the pneumonia patient get up to meals while his temperature is 101. Tuberculosis patients treated at home frequently do, and think they are taking the "rest cure" under competent medical supervision. A patient will spend eight weeks in bed with typhoid fever because the infection runs its course and the localized lesions complete their pathological cycle in that period of time, and without specific medication. Eight months or eighteen in bed, may be necessary to allow a pulmonary lesion to run its pathological course, and the patient to recover from the effects of the process. The analogy is not precise nor possibly fair, but may indicate by example an attempt to think in terms of tuberculosis.

Probably not over 25 per cent of all cases of pulmonary tuberculosis are ever admitted to a sanitarium. The combination of tuberculosis and financial security is rather rare. Expensive sanitaria are not, therefore, available for the great majority. Our responsibility is especially to those who cannot avail themselves of prolonged sanitarium care and instruction. Home treatment should be an imitation of the routine of the best sanitaria. A close approach to the precision of a sanitarium and the attainment of similar results is possible, but not often seen. Home treatment can be as effective, but seldom is. Home treatment, for people of moderate circumstances, means the possibility of spending more time at less expense, and time is the biggest if not the most essential element in controlling the disease.

The following are actual case histories of patients recently seen, which are related as practical illustrations of our failure to properly advise and to intelligently discharge our obligation; as illustrations of our failure to think in terms of tuberculosis:

No. 1. Miss N, age 24, working since seventeen, diagnosed 22 months previously as open pulmonary tuberculosis. Was advised at that time of diagnosis and told that she ought to quit work. Telling the doctor that she "could not live without working", he failed to impress upon her that she could not live if she continued to work. She has reported to his office regularly for almost 2 years twice a week for hypodermic medication presumably sodium cacodylate. This girl properly advised and instructed two years ago might have lost a year from work, or even two, but would have had an excellent chance of actual arrestment of her disease. Finally compelled to quit work because of progressive weakness, dyspnoea and afternoon temperature of over 100, she has shown splendid improvement, but has probably lost all chance of ever returning to competitive employment.

No. 2. Miss M, age 30, working for ten years. Breakdown two years ago. Trip to Colorado with three months rest. Returned to work under impression that she had permanently recovered. Gradually declined after working steadily for fifteen months. Temperature 101, anemic and emaciated. Represents a failure on the part of her medical advisor to instruct and advise the patient and to educate her to think in terms of tuberculosis. In bed at home, temperature normal in thirty days. Comparatively inexpensive as compared to previous experience. Will be able financially to continue regime indefinitely, but signs of disease in both lungs warrant the prognosis that she will never be able to work regularly for more than short periods. Should have given a year's time to the first attempt at arrestment and have been continued under supervision permanently.

No. 3. J. M., age 27, diagnosed September 1924, continued to work until December. Temperature now 101, pale, dyspnoeic. Diseased both lungs. Out of bed, dressed and sitting up part of the day. Two doctors have failed to explain to this man the one essential thing that might save his life—twenty-four hours a day in bed, beginning in September, would have prevented the early death which now seems imminent.

No. 4. Miss S, age 30, a pupil nurse. Over two years ago diagnosed by staff physicians as pulmonary tuberculosis. Changed residence to a neighboring state and occupation to clerical work, under the impression that change of climate would overcome the disease. Developed laryngitis, with aphonia the last winter. Has cavitation both lungs and will probably be compelled to go to State Sanitarium to await death. If full responsibility had been assumed by first examining doctors, she would probably not be hopeless now. The fact that she could continue an active life of employment for over two years before forced to succumb is fair evidence of somewhat favorable chances if she had been impressed by fair and intelligent advice in the first place.

The unsatisfactory situation as illustrated by these histories which is extremely common is not due in my opinion, so much, as some might be inclined to say, to the wilfullness and failure of cooperation on the part of patients as it is to a failure on our part to think in terms of tuberculosis.

I mean by the failure to think in terms of tuberculosis probably more than I can adequately or precisely express. To me it means a failure to have a comprehensive appreciation of the clinical course and character of the disease, of the slow progressive chronic type of the pathology, of the meaning of the physical signs of the disease even in the absence of serious subjective symptoms or objective disability. It means a failure to realize the time and persistence required to accomplish results and on the other hand a failure to realize how greatly the course and duration of the disease may be controlled by the means at our command. It means the failure to adequately advise and to sufficiently impress our patients with the full import of their problem, in such a manner that they will meet the issue intelligently regardless of whatever the apparent obstacles may be, at a time when their disease is amenable to treatment. The usual, slow, insidious onset and the absence of immediate danger to life in most cases, together with the economic and industrial factors involved by reason of months of idleness and loss of earning power, are probably influences which affect our mental attitude and point of view. The fact remains, however, that equivocation, evasion, compromise, delay, temporizing, indecision, and the half-hearted institution of a faltering program, indicative of an attitude, which so often corresponds to the mental state of the patient, are ineffectual. The pathology of pulmonary tuberculosis is inclined to be progressively destructive and not subject to control or arrestment in the patient who only gives casual, incidental or partial attention to its opposition. Those who are uninformed and unappreciative of the necessity for unlimited and undivided attention to the task, who are unconvinced on the subject, will ultimately and invariably fail. If we assume and discharge our full and intelligent obligation, many will succeed.

If we promise a patient an early cure, we are not laying the proper foundation for satisfactory and permanent accomplishments. Few cases can be actually arrested. Many may be carried through the more active stages of their early pathology by correct management, and live comfortably for years. Even with the necessity of a somewhat circumscribed physical existence, their outlook upon life is quite satisfactory. Fortunately, it seems to be characteristic of human nature to become reconciled and contented with a "half a loaf" after having been seriously threatened with loss of the whole. It is less disappointing and discouraging to the average patient to be taught from the beginning that it will be necessary for him to learn how to live with his disease, than to come to a realization a year or two later that the cure which had been promised, was either a mistake on the part of the doctor or that his disease must have been worse than he was lead to believe. More often than otherwise the question is one of conservation. To teach a patient how to live with his disease in order that he may not die with it is a thing of real value and importance. The time spent in the beginning is the determining factor. The patient will accept the situation if brought to understand, by an explanation of facts, that the question of "how long" is of secondary importance to the big question involved. The patient who lacks the character to accept a frank situation, the outcome of which lies largely within his own control, is handicapped from the start. Possibly, we may be permitted to philosophize to the effect, that such become the natural victims of the law of the survival of the fittest. My remarks may seem to indicate an attitude rather harsh and unsympathetic and not sufficiently encouraging. Encouragement of the patient and the maintaining of good morale is impossible in the face of an utterly hopeless condition. It is easy and without anxiety with the patient who has not been allowed to drift near the brink, before a serious effort at rescue has been attempted. A sufficiently encouraging outlook may be promised and obtained by the timely institution of an effective regime. Results, which may be expected, become apparent to the patient and of themselves constitute a reward which is the most satisfactory encouragement.

Having spoken largely in generalities and probably without even dressing old thoughts in new language, I only trust that what I have said may appear to some as pertinent and practical.

DISCUSSION

FRANCIS W. HEAGEY, M. D., (Omaha): Mr. Chairman, Ladies and Gentlemen: I think you will agree with me that Dr. Allen, in the presentation of this paper, has put forth a phase of this question of tuberculosis in a manner that is quite different and much more classical than the usual method of presentation of this type of paper. My only excuse for taking up the discussion is to emphasize some of these points he had brought out.

From the basis of my own experience with this problem of pulmonary tuberculosis, I find, in the first place, it only needs a suspicion of the diagnosis to make the diagnosis. We have many difficult problems about it, but most of us fail, as far as pulmonary tuberculosis is concerned, and miss the diagnosis because we have not even thought of it in relation to that particular patient. If we keep this thought of pulmonary tuberculosis as a possibility and a probability in the types of cases with symptoms that simulate it, I think you will agree with me we will rarely miss it. The cases we miss, we miss because we made one examination of the sputum and having found it negative, we have sent the patient away with that reassurance, and have not asked for a return.

Once having made the diagnosis, the first duty of the physician is to convince the patient of the problem he has to face. I am sure we may all of us make that mistake. If we do not follow these things up—and so many of us do not—the fact we have made a correct diagnosis is of no value. After a diagnosis of early tuberculosis is made, often no effects are to be seen in months and years, so our interest is prone to wane as far as that case in concerned. If we fail to convince the patient and the relatives of the seriousness of the case in the beginning, we ought later on in the disease.

I say to my patients, "Pneumonia settles the problem quickly. The patient survives, or dies. Tuberculosis merely gives him another chance."

The question is, will the patient take the chance? Will he make the effort, or can you convince him the effort is worth while to regain a certain degree of health? The result is a matter almost of psychology, if we want to use that term. You must endeavor to convince the patient he is up against a problem that requires one to three years; that it is a matter of incessant effort on his part, and the result can be attained only by a complete change of environment.

To my mind, there is no compromise in pulmonary tuberculosis. The patient probably has been leading up to it for a long time. When the symptoms reach a stage that leads to a diagnosis of pulmonary tuberculosis, the patient's resistance is at a point to be brought back by a right-about-face policy. That is why I feel treatment is entirely a matter of sanitarium. What does it do in addition to all the things we know? Discipline, so far as I can see. If you can not convince your patient he must discipline himself—that these measures are necessary—we fail absolutely except by miraculous measures or by means not under our control.

The patient does not get well until he has the proper attitude toward the disease, and that is within our own hands as physicians, to keep hammering on our patients and tell them what to do and how to do it. Many of my calls are made to see they keep on in their well doing and keep up their rest.

A sanitarium, rightly run, gives these people this discipline; and if well disciplined and they have taken this thing to heart, it is almost impossible to change their method after they have this idea in their head. It does work. I have in mind a girl who was sent to the Kearney sanitarium with pulmonary tuberculosis. Her disease was arrested and she returned home. Her second sister was taken down with it. This girl who had learned the sanitarium regime took her sister in hand and trained her so well that even so far as lifting her arm over the bed, she was afraid to do it when she had fever. So far as I can see, the cure is coming along.

One other thing is indifference so far as quarantine is concerned. It is so easy to quarantine diphtheria and scarlet fever, because we can see the immediate effect. As far as tuberculosis is concerned, it is six months or a year from now.

WILLIAM N. ANDERSON, M. D., (Omaha): There are two or three little things that strike me as being original. It seems strange we should say a "new" way of discussing this topic; yet for the last number of years, practically everything that has been written about tuberculosis is the importance of making an early diagnosis before we meet the situation. I believe this paper says nothing about early diagnosis of tuberculosis, and I am pleased it does not; because the subject at hand is what we must do with the cases we have already diagnosed. If we would meet the situation in those cases, training our tuberculosis patients and giving them the proper advice to start with, we would not have to talk about early diagnosis.

Another thing that comes to me now is the economic question in the handling of these cases. I have made a great many mistakes in saying to these people, as all of you have, "You should go to a sanitarium," and failed to impress the patient it is not the sanitarium and the climate, but the sanitarium. The patient and the family get the impression it is the climate. All of us doing work with tuberculous patients have gotten away from the idea of climate. If statistics were made, I believe there are more tuberculous cases who have died from going to the mountains than were cured by going to the mountains. If they are cured, it is the rest which gets them well.

The other failure I have made is that of saying to my patient, "If you will go to the sanitarium for three months and come back, you can keep well by being careful after your return."

He can't do it. Unless the patient can afford to stay a year or eighteen months or longer, do not send him.

Then what will you do with them if you keep them at home? I hope you do not ask them to get up out of bed and go to your office, for a hypodermic or x-ray treatment won't help the disease if they have a temperature of 102 degrees; and certainly nothing you would do would counteract the ill effects of getting out of bed to go to see you.

The last point I want to make is this: there is not much accomplished by frequent examinations in tuberculosis. As a matter of fact, they are a detriment to the individual. When you force him to cough and inhale deeply, you have done the patient a distinct harm. What you should do is not to devote so much attention to the treatment of the disease as to the environment of the individual. I believe it is possible to accomplish one hundred times more for the tuberculous individual in his own environment, if you will take care of that environment, as to send him away from his loved ones; when very often he has to take a job to get the money to get back home. Keep them home and use judgment in their environment. (Applause).

DR. ALLEN, (closing): I have nothing further in particular to add. I think I am slightly of an argumentative turn of mind, and nobody brought up opposition, so I do not know how to proceed.

Dr. Heagey recommends and tells you sanitarium treatment is the correct and proper and effective treatment. If there were a million beds in the United States to take care of the million cases of open tuberculosis which we have, in each instance, probably we could discharge our personal obligation by "passing the buck" and having the individual admitted to the sanitarium. There would be no question of our obligation. But there are not beds enough, and probably not over 15 or 20 per cent of cases of consumption ever see the inside of a sanitarium. There are 75 or 80 per cent of cases that have been neglected in the beginning, following an actual diagnosis, for a sufficiently great length of time that they drift to where they become far advanced, hopeless cases of tuberculosis.

I do not care to enter into a discussion particularly of climatic influences. It is a very involved subject. There is a lot of psychology in it—to use Dr. Heagey's word. As far as I have been able to ascertain by reading the theories of men of presumably vast experience on this question, to sum it up briefly, the effect and influence of climate, generally speaking, are not specifically upon the disease itself, but upon the individual; which, therefore, is admitting that under proper circumstances, a change of climate or environment can be beneficial in a percentage of cases. That is about as fair a statement as I know how to make on the climate proposition.

Of course the economic problem is a difficult one. When an individual with tuberculosis is not able financially to maintain himself longer and obtain proper care, nothing particular is gained by delaying the ultimate facing of the actual situation. Our institution at Kearney, for instance, is not able to give us data or statistics which would indicate that the treatment of pulmonary tuberculosis is very effective; but that is not the fault of the institution or its location. That is the result of our temporizing and failing to meet the situation among the indigent who are not admitted to that sanitarium until 90 per cent are practically hopeless cases.

RADIUM IN UROLOGY*

Everett E. Angle, M. D., Lincoln, Nebraska

Radium in the field of urology has not given the brilliant results that it had in dermatology or in gynecology; still it is some help in combating the sinister inroads of malignancy of the genito-urinary tract, and this help should not be ignored.

That radium exerts a selective action on certain tumor cells is an established fact. Our work in skin and lip cancers gives any amount of clinical evidence on this score. Basal cell carcinomas are peculiarly suseptible to radiation, and when a proper dose of radium is applied they slowly disappear, leaving little or no scar and do not return after many years.

Similarly, lymphoid tumors without apparently any exceptions, melt rapidly under adequate radiation, although secondary changes such as fibrosis may render such growths refractory.

In general tumors derived from embryonal cells and retaining embryonal characteristics, even when growing rapidly, are, as a rule particularly susceptible to radiation and in this group some of the most remarkable and paradoxical of radium cures have been recorded. It was early observed that very cellular, rapidly growing tumors of any type even when derived from adult cell, are often very suseptible to radiation, although the rapid extension of such tumors rendered the prognosis poor.

On the other hand, malignant tumors derived from adult cells and reproducing adult cells such as, squamous carcinoma, many adenomas and other benign tumors prove very resistant and quite refractory to radiation. Radium should not be expected to cause the regression of an adenoma of the prostate, for instance. It does control the hemorrhage that sometimes is the only annoying symptom, but it will never take the place of operative removal in these cases.

The results of radium treatment of carcinoma of the prostate are superior to operative removal both in causing regression of the disease and in coping with urinary retention. Although only about 3% of these cases live longer than three years, they are kept quite comfortable and are not subjected to useless surgery.

---

*Read before the annual meeting Nebraska State Medical Association, Lincoln, May 12-14, 1925.

The early symptoms of cancer of the prostate are disturbance of urination, hematuria and pain. Examination shows a board like hardness of the posterior lobe of the prostate. Residual urine may be present. Stones in the prostate is the one condition that is apt to be confused with cancer. Unfortunately, in only about 2% of these cases is the carcinoma confined to the prostate.

The technique and usual course of these cases can best be illustrated by following one case through.

Mr. T—— was referred to me by Dr. Geo. Walker, May fifth, 1924. A retired farmer of 68 who had enjoyed excellent health before onset of difficult and frequent urination 6 months before. At that time he had nycturia 4-5, and frequency of every 30 minutes during the day with dribbling. His urinary stream was very small and difficult to start. Examination showed a well preserved man in good general condition. Residual urine Oz. III, no blood. Rectal examination showed the sphincter slightly relaxed.

The prostate was enlarged about three times normal, with a board-like hardness of the posterior lobe which extended on the right side well up over the seminal vesicle. X-ray showed no evidence of metastasis in the pelvis or long bones.

On the 11th, he was given a 25 mg. tube of radium in .5 mm. of silver and .2 mm. of rubber for 30 minutes per urethram. Pain and bleeding made this route of application impossible, which is usually the case. So 50 mgs. in a lmm brass filter was given for two hours per rectum.

On the 16th, 20 mgs. of radium was introduced with prostatic needle 15 cm long directly into the cancer. Under novocain anesthesia with a guiding finger in the rectum, the needles are inserted through the perineum into the cancerous region of the prostate. These were left in place for 12 hours. Then 50 mgs. in brass were given per rectum for 9 hours more. This was repeated on the 18th.

By the 27th, patient had some increase of frequency and slight mucous discharge from rectum.

By the fourth of June his prostate felt softer and by the 16th his symptoms were markedly improved. He was active all day. At night he would have to get up only once or twice and during the day he could hold his urine for 4 hours without discomfort.

A month later his nocturia increased to 3 or 4 and he had some bearing down pain when standing. 72 hours of 100 mgs. of radium in lmm brass at 4 cm. distance were given at this time over the symphysis and sacrum.

By August 8th the residual urine increased to 6 ozs. and he started to have pain in his bladder. A suprapubic cystotomy was done under local and 50 mgs. in 5 bare steel needles were inserted directly into prostate and left for 10 hours. By the 15th he was up and around with a permanent drainage tube, to be sure, but very comfortable, no bearing down pain. He frequently made trips to his farm and walked all over it.

He continued about the same until the latter part of September when the pain started in again in his back and rectum. His prostate at this time was soft but for a few ridges on the right side. September 30 a perineal prostatectomy was done under gas anesthesia; prostate was an adherent scared mass which had to be removed in pieces. 100 mgs. of radium in 2 brass capsules were left in the prostatic cavity for 20 hours after the operation. Patient made a good recovery and was up after two weeks. Perineal wound was slow to heal, and on the third day after operation a recto-vesicle fistula opened. This was not due to the radium, as the reaction from radium would not start for another ten days, but probably due to destruction of blood supply in removal of the adherent prostate.

In April of this year patient started to fail rapidly and died uraemic on the eighth day of the month.

The first hypodermic for pain was needed just two days before death. Autopsy was not permitted.

The course of this case was far from satisfactory, yet it was certainly a great improvement over trying to control the pain from the start with morphine.

When routine rectal examinations are done on all males over fifty years of age, this condition will be recognized earlier and more can be done to cause regression of the disease.

CANCER OF THE PENIS

Cancer of the penis is a refractory form of squamous carcinoma, and it may be mentioned to illustrate the dependence of results on the anatomy of the organ effected. The thin epithelial covering of the glands is closely adherent to the heavy fibrous tunica which encloses the cavernous tissue. While long restrained by the tunica, squamous carcinoma, once breaking through, finds itself in a roomy system of vessels. The lymphatics leading from the glands are also rich and wide. Finally the submucosa between the epithelium and the tunica is very thin and affords little opportunity for the cellular reaction following radiation. Accordingly, these carcinomas are difficult to eradicate, but with pre-operative radiation, followed by amputation, the results are better than by amputation alone. Many early papillary tumors respond well to radiation alone, thus saving a mutilating operation.

Most urologists will concede to radium some value in the control of bladder cancers. For instance, certain papillomata, apparently benign, and certainly benign on examination of small excised portions, refuse to be destroyed by fulgeration, or if destroyed, rapidly return in situ. If radium be held against such tumors, they entirely change their reaction to fulgeration, and disappear with the greatest ease.

If the bladder tumor. instead of being soft and papillary, looks harder and shows on pathological examination atypical cells in atypical arrangement, such a tumor is malignant and should be delt with by radical operation or radium.

Barringer summarizes his series of bladder carcinoma treated with radium as follows:

Of 23 cases of papillary carcinoma, in 15 the carcinoma has been removed, in 6 the result has not been determined, 2 are dead or dying.

Of 61 cases of infiltration carcinoma, 18 are well, result not known in 13 and 30 are dead or dying.

A large majority of both papillary and infiltrating carcinoma involved the bladder neck or trigone, making operative removal impossible.

The operative mortality of suprapubic implantation of radium is less than 2%.

TERATOID TUMORS OF THE TESTIS

In teratoid tumors of the testis radium and x-ray may be expected to cure only about 50% of those cases diagnosed before metastases are evident. But deep therapy has removed the necessity of the Hinman operation which is the extensive removel of retroperitoneal glands, at the time of removal of the testicle.

To summarize, then, we find that the usefulness of radium in urology is very much limited, for the following reasons:

Cancer of the prostate is rarely diagnosed before extensions beyond the capsule have taken place.

Cancer of the prostate is difficult to treat with the massive doses of radium which are necessary to cause regression, as the urethra and rectum are both intolerant to radiation, and the trigone is a sensitive area, also.

Cancer of the bladder frequently yields to treatment, but usually requires a cystotomy with direct implantations into the base of the tumor.

Cancer of the penis reacts well to radium when diagnosed early, which is also true of teratoid tumors of the testis.

Yet even if the results of radium treatment are not as easily obtained nor as brilliant as in skin lesions, the resultant alleviation of pressure symptoms, the lengthening of life, and the increasing number of cures make radium a valuable adjunct in our treatment of this difficult group of cases.

DISCUSSION

W. L. ROSS, M. D., Omaha: I do not feel competent to discuss the Doctor's paper, but I should like to stress one point he mentioned, and that is the early examination and diagnosis of disease of the prostate. He stated frequent examinations of the prostate in patients under fifty years of age would enable the doctor to make an early diagnosis in a great many cases.

It has been my limited experience that one should examine a prostate whenever there is an unusual pain complained of, not a sharp pain, but a dull sensation with a frequent desire to urinate both at night and in the daytime. Some of these cases will not have a residual urine. They only have an enlarged prostate, and a hypertrophied condition that has not taken on the cancerous condition yet. If examined in that particular stage, a great deal can be done.

I have not had the experience of using radium particularly in these cases, but the x-ray, which is very similar, does give very satisfactory results to the patient and to the doctor; so that I should like to emphasize the duties of the physician, even if a patient is seen complaining of hemorrhoids, it is so easy to make an examination of the prostate, I think we should make a habit of doing it.

DR. ANGLE, (closing): The control of pain by radium is in relieving the pressure caused by the tumor growth at the bladder neck. The patients complain of bearing-down pain which is terrible; and once we resort to morphine and opium, we have to use large doses and keep it up. If you are able to insert radium needles through the perineum after using a little local anesthetic, you can shrink this tumor — not enough to cure it, because it has already metastasized beyond the prostate — but enough to relieve the pain and allow the patient to live for months in relative comfort. This is indeed an advantage.

I thank Doctor Ross for his kind remarks.

A. B. SOMERS, M. D., Omaha: The advantage is in shrinking the prostate, not in relieving the pain?

DR. ANGLE: We do not know of any direct action on the nerves. In some cases where a lip cancer, for instance, has been heavily treated with radium, there may be a contraction of the scar tissue; but the relief of pain is from relieving the pressure on the nerve by the action of radium on the tumor.

"Don't grumble, don't bluster,
Don't dream and don't shirk;
Don't think of your worries,
But think of your work;
The worries will vanish,
The work will be done;
'No man sees his shadow
Who faces the sun'."

WHY I DISPENSE MY OWN DRUGS*

Miles J. Breuer, M. A., M. D., F. A. C. P., Lincoln, Nebr.

In this day of refined professional manners, it may seem a little beneath the dignity of a physician to be handing out pills to his patients. I have deliberately continued dispensing drugs myself because I believe the practice to be supported by strong reasons from the standpoint of the patient's welfare. The drugstore is a relic of the days when dispensing involved the gathering and preserving of plants, and laborious processes of extracting and preparing them. Today, this part of the work is done by the factory production method. The druggist is not a chemist, but a merchant, and as a result of the evolution undergone by the preparation of medicaments, his prescription work is only an incident connected with the sale of soft drinks and sundries; even the patent-medicine side of the business is getting weak. That is a result of economic evolution; not of any personal characteristics of pharmacists.

I wish especially to call attention to the importance of this question, in view of the attempt during the last session of our state legislature, to curtail the handling of drugs by physicians.

My reasons for dispensing fall into three main divisions. The first is, that it enables me to retain medical control of my cases. The pharmacy business still carries with it the old suggestions that medicines cure diseases. Most druggists still believe that implicitly. Many people still believe that the physician's chief accomplishment in curing them was to "find the right medicine." A patient who believes this, once he has his hands on the prescription, continues to treat himself, and the physician never sees him again. This is not in accord with modern ideas of the treatment of disease. If such a patient disregards all the other directions you have given him, you will none the less be discredited in his eyes if your prescription fails to cure him. If he is compelled to come back to the physician for more medicine, the latter can check up on him and keep him under observation. In fact, more frequently than not, I give a patient something, even though no particular medicine is needed, merely to hold him down concretely to the other instructions, and to have a handle by which to keep him under control and observation.

Since it is really the management of the case that counts, the hygiene, diet, rest, exercise, watching for complications and danger signs, and the medicine is usually but incidental, the patient must not be allowed to get the idea that the doctor is selling him medicine. The medicine is merely part of the doctor's service to the patient, just as are the dressings in the care of a wound.

The same patient who puts the blame on the doctor if he does not get well by getting his prescription refilled and neglecting all other medical management, will, if he does get well, give the medicine to all of his friends, and take it again the next time he is sick. Putting the prescription into his hands is turning loose a lot of self-dosing and neighborly treatment without diagnosis. A druggist should not, of course, refill prescriptions indiscriminately; but most druggists cannot maintain a detective bureau to keep track of how their medicines are used. Also, there are among druggists, as among all other callings, men who do not observe the proper standards of ethics, and will appropriate prescriptions to their own use in counter diagnosis and treatment. Most of us have seen in the drug-store the big yellow sign got out by a well-known manufacturer of surgical supplies: "THE DRUGGIST IS MORE THAN A MERCHANT. TRY THE DRUG-STORE FIRST".

If my fee for a minor consultation is two dollars, and I give the patient a couple of prescriptions which cost him two dollars at a drug store (this is an average example), a sense of relative values is created in the patient's mind, which is very inaccurate, and from a therapeutic standpoint, very harmful. No wonder that the patient pins more faith in the medicine than in my services; especially if, as is usually the case, I could furnish him the same material at a total cost to myself of about twenty-five cents. It would pay me to give it to him free of charge.

My second reason is, that dispensing enables me to give the public the kind of service that it demands. The successful business man is he who gives the public what it wants. In essential scientific matters which he does not understand, the patient trusts us, and gives us our own way; but he wants certain concessions to his ideas, and the physician who understands and furnishes these is going to have the greatest therapeutic success; he will actually get more people well.

---

*Read before the Lancaster County Medical Society, April 18, 1925.

The chief thing that the people want, is personal service. The relation of the patient to the physician is a highly personal one. Medicine has not yet reached the stage where its work can be carried on by mechanical equations. What you do to the patient yourself helps him far more than if it were done equally well by your nurse or your assistant. There are personal influences at work which are not measurable nor producible on a factory scale. This is rather a subtle therapeutic factor; most patients would certainly not admit it if confronted by a straightforward statement of it. Most doctors today use it, but not consciously, and would also deny my straightforward statement of it, unless they are good psychologists. Yet the fact remains that the patient wants the doctor to do something for him with his own hands, even if it is only preparing a medicine.

The history of the numerous cures and methods of treatment that have actually cured millions of patients since medical history began, cannot help convincing us of the tremendous power that mental suggestion has over our physiological processes. The fact is incontrovertible by any amount of sneering disbelief that mummy's fingers, bones of saints, hangmen's ropes, and similar things, have actually cured cases which puzzled the regular physicians, just as chiropractic is doing today. Of course, such suggestion succeeds completely only with hysteria; but it is of material assistance to scientific methods in organic lesions. Furthermore, none of us is sure today just how much of a hysterical element exists in the particular case before us; diagnosis is not yet quite accurate enough. If a nail from the true Cross had as much power as authentic records seem to indicate, surely we are not doing our best unless we avail ourselves for the benefit of our patient of the suggestive power in a bottle of medicine from a trusted and revered physician. Let us not disregard the average patient's point of view altogether. There is too much history behind us for us to deny that this factor will add power to morphine or strychnine. But, we must know what we are doing; we are justified only if we work with a full knowledge of all available scientific facts, psychological as well as pharmacological.

A phase of dispensing that will appeal especially to the thinking patient of today is that thereby the doctor takes the whole responsibility. If something goes wrong, he cannot pass the buck to the druggist. Therefore, the physician who dispenses, cannot afford to keep fluid extract of digitalis for a year, or to buy a cheap thyroid preparation which is mostly inert protein.

Another thing the patient will appreciate, is the convenience of the practice. It takes five minutes longer for the doctor to give him his medicine; and it saves a trip to the drug-store and a half an hour's wait for the occult rites to be performed behind the prescription counter.

My third reason is to myself the most important. Of course, we must relieve sick patients, and we must make a living; these are the legs we stand on. But, all our lives and forever, we must be trying to learn. Today, in most respects, we are still groping. Some day, we shall understand disease, and how to treat it. We have made fair progress in the laboratory and in the hospital; but the great uncharted wilderness is general practice, that class of cases that never gets to the laboratory or hospital. There is where we have the most uncertainty, the greatest empiricism, the least accuracy; there is the crying need for systematic research.

When I give a patient a prescription and never see him again, I have no idea what happened. Is he well? Is he still taking the prescription and giving it to his friends? Did he get worse and go to another physician? Was my diagnosis correct? If it was, did I plan my treatment correctly? Or, suppose he comes back, unimproved or worse; was my diagnosis wrong? Did the druggist make a mistake or was his material inert? Or doesn't the stuff really work the way the literature claims it does?

Every general practitioner should have some little hobby on which he is constantly working and observing; and he should observe and record accurately. He should record the history and diagnostic findings, his theory of the situation, how he treated it, and the results thereof. After having accumulated a mass of such data, he is in a position to make statements on the subject. Only by such methods can general practice be raised to the same plane of scientific respect that is now accorded to the laboratory and the hospital.

A physician who sees and handles drugs frequently, is far better able to keep in mind their effects and uses than one who hasn't seen them since his school days. It is in the laboratory that we really learn chemistry; not in the book or lecture-room. There are a great many substances in the universe that have definite and useful effects on physiological function, and any one of us knows only a small fraction of them. I do not refer to mixtures with fanciful names got out by drug manufacturing houses. Only the laboratory method of study will enable us to make progress in this knowledge.

I do not care to consider the financial side of the question in this paper. While we have a right to try and secure financial remuneration for the work in which we spend our lives, the mere fact that a procedure will make us more money is not sufficient justification for its adoption. But, I cannot omit one phase of the financial side. When a patient comes to me and states that he is unable to pay me, and I, therefore, give him what help he needs and put two dollars on my books never expecting to see it, while he goes to the drug store and is required to put up two dollars cash, I cannot help feeling the injustice of the situation, especially if I could have supplied him the medicine for a few cents. I feel that I am entitled to his two dollars in preference to the high-priced drug clerks and the landlord of expensive downtown drug-store locations; especially as I spend my spare time in study instead of in selling soft drinks and cigars.

In closing, I wish to say that dispensing, if properly done, involves but little labor, and a moderate outlay of capital. No retail druggist is able to put up as efficient and palatable a bottle or tablet as do the large drug manufacturing houses, and his prices cannot even approach theirs. Things can be bought so nearly ready prepared, that the average time for filling a prescription need not be over three or four minutes. Nor is a large stock necessary; it should be confined to those articles whose use one thoroughly understands, which in the cases of most of us, would not be very large; but it should be constantly enlarged by further study.

BACTERIN TREATMENT OF PERTUSSIS

S. A. Swenson, B. Sc., M. D., Oakland, Nebraska

Pertussis or whooping cough is a very serious disease, especially among children. In 1900 there were 10,000 deaths in the United States from whooping cough(1) while in 1911 there were 6682(2). Although this would indicate a decided decrease, other statistics show that this decrease is not uniform. The report from the New York Health Department for the years 1908-1812(2) shows a steady decrease in the number of deaths from scarlet fever, measles, and diphtheria, but no such decrease in the death rate from whooping cough. Especially is the mortality high in children under one year. It is given variously as (3)25% to (4)42%.

There has been some dispute as to whether the bacillus pertussis is the causative organism of whooping cough. Bordet(2) in collaboration with Gengou isolated the bacillus in 1900 and grew it in pure culture in 1906. It remained for Mollory and Horner(5) to apply Koch's postulate and since their work in 1912 the Bordet-Gengou bacillus has generally been accepted as the causative organism of whooping cough.

As early as 1912 reports were beginning to be published in regard to prophylaxis and treatment of whooping cough by means of bacillus pertussis bacterin(6). Sill(2) reports a series of sixty-one cases with very favorable comment in his article on whooping cough in the 1914 edition of Forscheimer's "Therapeutics", and Billings comments very favorably on work done up to that time. Since then a considerable number of clinicians have reported their findings in regard to the effect of bacterins on the disease while very little work has been done in regard to their prophylactic use. This seems rather strange, considering the monumental work done with bacterins in the prophylaxis against typhoid fever. It is due to this lack of material in the literature that I present this report.

Dr. J. A. Henske(7) of Omaha, early in 1924, gave a brief survey of the work done in the bacterin treatment of pertussis and reported eighty-five cases from his own practice. In this report he stated that twenty

---

*Read before The Fifth Councillor Dist. Meeting, Fremont, Nov. 17, 1924.

cases were inoculated before the development of the cough.

There seems to be considerable difference of opinion as to the efficacy of pertussis bacterins as a therapeutic measure. As Henske(7) states, Huenekens and others give favorable reports. Rewalt(8) reports the result of the treatment of one hundred thirty cases with marked effect in seventy-nine, more or less benefit in forty-five others, and no benefit in six. Aurichio(9) in a report of a series of one hundred ninety-six cases, says that only fourteen, or a little over seven per cent, received no benefit. He claims a cure in thirty-five cases and all the remaining were benefited. McKibben(10) reports, in a series of cases in private practice, a benefit in ninety-five per cent of the cases. He as well as Rewalt, recommends the use of plain pertussis vaccine. Herman and Bell(11) in a study of three hundred cases of pertussis in a hospital series, claim a specific effect in one-fourth of the cases. They state that those cases that fail to respond to the bacterins may not be due to the Bordet bacillus. Nicolle and Conor(2) treated one hundred four cases, six of which received no benefit. On the other hand, Patterson and Smelle(12), in a study of one thousand cases, sixty-four of which were treated by bacterin, conclude that it is of doubtful value. A commission appointed by the New York Department of Health, November 11, 1922(13) reported that bacterins in the treatment of pertussis are of doubtful value, but recommended their use until more fully determined.

Reports on prophylactic inoculations are very meagre. Sill(2), as early as 1912, reported twelve cases immunized by rather small doses of bacterins. None of these contracted the disease although they were directly exposed. Saunders(2) and his co-workers, reported fourteen cases immunized, only one of which developed the paroxysmal stage of the disease, while seven others had a mild cough. Barenberg(9), in discussing Rewalt's paper, states that as a therapeutic measure bacterins are of no value, but as a prophylactic measure, the case is different. He states that in two epidemics the percentage of vaccinated children who contracted the disease was much smaller than those not vaccinated. In Henske's(7) twenty cases, inocculated before the onset of the disease, one-fourth developed whooping cough. In twelve of the cases the course was markedly modified; in two, no apparent effect was noted.

My own experience with pertussis bacterin dates back to 1919 when one of my little girls contracted the disease in school. As we were unaware of the presence of pertussis in the community, she was entering the paroxysmal stage before I started the vaccine. All of my four children were then given the inoculations, three each, with the result that our one-year-old baby contracted only a light cough, which we would not have recognized as the whooping cough, had not the other children had the disease. The girl who first contracted the cough had by far the worst attack. The same year the three children in another family were vaccinated, one of whom was a baby about one month old, with the result that after the second inoculation the cough, which had hitherto been very severe, quickly abated. Two other children from a neighboring town, where an epidemic was raging, were inoculated the following year. The mother reported that they contracted a light cough, but that she was not certain as to its being the whooping cough. During the summer of 1923, six more cases were inoculated. In each of two different families, a baby less than a year old contracted a severe cough. After two inoculations the cough quickly disappeared. Another child entered the paroxysmal stage before the whooping cough was suspected. After two inoculations the cough quickly subsided, even in this case.

It was thus with decided enthusiasm that I urged the use of the bacterins when the severe epidemic struck us in September of last year. This epidemic was by far the most extensive and severe that I have experienced since entering the practice of medicine. Due to my urgent advice to use bacterins, most parents, who consulted me consented to have them used. Because of the fact that my colleague, was away from town during part of the epidemic I had the opportunity to inoculate more cases than I should otherwise have done.

In all, one hundred forty-two cases were inoculated. Of these fourteen were given four inoculations each. Practically all the others were given three each. Thus, in all, about four hundred fifty inoculations were given. Two or three rather severe reactions followed in a few hours after inoculation. One little girl had a high fever for about twenty-four hours, the maximum being one hundred four. In another case the local reaction was so severe that an abscess was feared, but while there was some fluctuation, it soon subsided, and incision was not necessary. Mulford's serobacterin mixed, was used. The initial dose was one to four minims, depending on age and other circumstances; containing two hundred fifty million to one billion killed bacilli pertussis. Of the one hundred forty-two cases inoculated, seventy were started before the onset of the disease. Of these, forty-nine did not contract the disease, while twenty-one had the cough to a greater or less degree. Few reached the stage of paroxysm; the exact number is impossible to ascertain, as they were not under close observation. Of those who did not receive the inoculation until the onset of the cough, a comparatively large number were apparently not benefited. The later the first inoculation was given, the less appeared to be the benefit, generally speaking, although there appeared to be exceptions to this rule. Toward the later stages of the epidemic children who were inoculated several weeks before the onset were given additional inoculations every third or fourth day after the onset so as to re-inforce the immunity. Among those who had the disease, seven were less than a year old. One was forty.

There was one death in the series. This occurred in a baby about six months old, who had had a severe cough in the early summer, which was diagnosed pertussis on account of exposure. The child was given two inoculations at that time, after which the cough subsided. When the real pertussis developed, the parents did not suspect the whooping cough, and the child did not receive the inoculation until the paroxysmal stage, and a bronchopneumonia had developed. The child lived until the cough and pneumonia had cleared up, but died from inanition, following a rather severe stomatitis.

COMMENT

It was with keen disappointment that I noted the failures in results. My over-enthusiasm was natural in the beginning of the epidemic, in view of previous experience. Comparing the results with immunization against typhoid, the principle of which is the same, it is rather disappointing. As to death rate, this is low, considering the number of small children in the series, but this has little significance. The mortality from respiratory diseases in the country is usually low. There was to my knowledge, only one other child in the community who died as a result of whooping cough, during the epidemic in question. In my whole previous practice of fourteen years I have had one death from whooping cough, this being a baby only a few weeks old. That there is an active immunity produced by inoculation, there can be little doubt. It is impossible to know how many of the children who escaped the disease following inoculation would otherwise have contracted the same. A large per cent of these, however, were directly and constantly exposed and still were not infected. For instance, in some families, one child would contract the disease. All the children who had not previously had whooping cough were inoculated, with the result that two and sometimes three escaped altogether, or had the disease in a very mild degree. As whooping cough is one of the most highly infectious diseases, resembling, in this respect measles, it is reasonable to suppose that a considerable number of those who escaped, would have had the cough if not immunized. Yet it is difficult to see why a more effective immunization cannot be attained. Hueneken's work throws some light on this problem(14). He showed by means of the complement fixation test that it was possible after prophylactic injection of pertussis vaccine to demonstrate antibody formation. The freshly prepared vaccine was much more effective than stale vaccine. The duration of antibodies in the blood of immunized patients was short. All became negative after a lapse of six months. Those given four weeks' old vaccine gave positive reaction in fifty per cent of the cases, while two weeks' old gave positive in seventy-five per cent. The conclusion was drawn that vaccines two weeks old had begun to deteriorate.

CONCLUSIONS

1. Pertussis bacterin is useful both for immunization against and treatment of pertussis.

2. Only the freshest obtainable vaccine should be used.

3. Prophylactic inoculations should be made only during epidemics, as immunity is of short duration. Those vaccinated more than a month previous to the onset of the disease might well be given additional inoculations in the early stages in order to reinforce immunity previously attained.

4. Therapeutically, the earlier the vaccines are given, the better prospect of beneficial results.

5. Use of bacterins after the catarrhal stage is of questionable value.

REFERENCES

1. Osler's Modern Medicine, 1907, Vol. II, p. 459.
2. Forchheimer's Therapeutics, 1914, Vol. V, p. 300-311.
3. Pfoundler and Schloesmann, The Diseases of Children, 1908, p. 475.
4. Epidemiological Study of Whooping Cough in Amsterdam, Internat. Med. Digest, 1924, p. 155.
5. Tice, Practice of Medicine, 1923, Vol. V, p. 464.
6. Graham, E. E., Treatment of Pertussis with Vaccines, Am. Jour. Dis. of Children, 1912, Vol. LXX, p. 378.
7. Henske, J. A., Nebr. State Med. Jour. Vol. IX, p. 6.
8. Rewalt, Robert K., Vaccine Treatment of Pertussis, Penn. Med. Jour. Vol. XXIV, 1920-1921.
9. Progressive Medicine, Dec. 1921, p. 391.
10. McKibben, W. W., Treatment of Whooping Cough in Private Practice, Boston Surg. Jour., Sept. 1923, No. X, p. 239.
11. Herman, Charles, M. D. and Bell, Thomas, M. D. A study of Three Hundred Cases of Pertussis in a Hospital, Archives of Pediatrics, Jan. 1924, p. 13.
12. Progressive Med. March 1923, p. 209.
13. Ibid, p. 210.
14. Huenekens, E. J., Report of the Use of Pertussis Vaccine Controlled by the Complement Fixation Test, Am. Jour. Dis. of Children, 1918, Vol. XVI, p. 30.

REPORT OF A CASE OF TETANUS

F. P. Dorsey, Sr., M. D., and F. P. Dorsey, Jr., Assistant, Hartington, Nebr.

"Buddy" D____, brought to Hartington from Wynot by Dr. Telleson in a state of extreme muscular rigidity; trismus being present in the jaws and risus sardonicus characteristically present in the face. From the history given, we found that ten days before he had stepped on a rusty nail. The foot after repeated dressings appeared normal on the sixth day; but during the course of the evening of the eighth day the patient refused to eat, crumbled the food in his fingers, and complained of slight soreness of the throat. The patient was ten years old.

The next day, August 10, Dr. Telleson was called and found the symptoms of tetanus to be undeniably present. The patient was then put to bed; opisthotonos following two hours later. For the next three days the rigidity of the different muscles was almost constant; varying, however, from hour to hour. From thence on, muscular spasm was clonic in nature varying in intervals from one to four hours.

On the tenth day, August 20, clonus subsided to two in every twenty-four hours. Two days later the jaws relaxed, the patient was able to talk, move around in bed, and finally able to chew his food. Complete recovery from thence on was uneventful.

Treatment consisted of 10,000 units intravenously of tetanus antitoxin the first day; 5,000 units subcutaneously the second day; 1,500 units the fourth; and 5,000 units intravenously the sixth. The first three injections caused no irritation and seemed to have no effect, but the fourth caused extreme redness and swelling of the arm and hand. Supplementary treatment of morphine sulphate, ¼ grain hypodermically, twice daily — and chloral hydrate, thirty-five grains per rectum at six hour intervals; both of these being given in the above manner, the first four days. The foot was examined and found to be almost completely healed. However, a two-inch transverse and vertical incision was made and the wound allowed to bleed freely.

Added points of interest were that through the entire course of the disease respiration and heart-rate were relatively normal; and temperature was normal throughout. Suffering of the patient was agonizing in the extreme, but he was able to swallow at almost all times and take some nourishment by means of a straw. The antitoxin used was also small in quantity, considering that the case was in an advanced stage when treatment was started.

Reference to text-books was very unsatisfactory. Among those consulted were: Tice, Welch of Johns Hopkins, Kendall of Northwestern in Chicago. Some state that the antitoxin is of no benefit and others advocate doses up to 200,000 units.

APPRECIATION OF THE TELEPHONE

Tinkle, tinkle, little bell—
How I wish you safe in h--l!
Central on the job all night,
Doctor sleeping sound and tight.
"Baby's got the stomach ache,"
Mama shaking like a quake;
Papa running here and there,
Barks his shins upon a chair!
Doctor scooting through the air:
Lights go out; gas all gone;
Motor dead a mile from home;
Doctor cussing like a fiend
Baby, motor, gasoline!!
(He arrives.)
Baby sleeping in his bed;
Papa's arm round mama's head.
Nothing happened after all!
Doctor on a useless call!
Tinkle, tinkle little bell!
I don't hear you. Go to h--l!

— Robert B. Dempsey.

Turn a sunny face to the world. If you have nothing else to give, you can at least give a smile as you go on your way.

UNUSUAL TREATMENT OF ECTOPIC PREGNANCY

Miles J. Breuer, M. D., Lincoln, Nebraska.

A year ago, a young married woman came in, stating that her menses had ceased, and that she wished to check up as to whether or not she was pregnant. She had one child fifteen months old. Examination revealed evidence of a pregnancy about six weeks old.

Two weeks later she came in again, complaining of pains on the right side, low down in the pelvis. The inquiry, aimed at bringing out by means of the history the character of the pains, did not indicate either inflammatory nor a spasmodic character. The enlargement of the uterus, on vaginal examination, seemed to be entirely on the right side. I suspected an ectopic pregnancy, and studied it with that in mind, for a couple of weeks, at intervals of two and three days. At the end of that time, a separate enlargement could be felt to the right, quite distinct from the body of the uterus. A sound inserted into the uterine cavity under asepsis showed this cavity to be the length and size of a nonpregnant uterus.

Naturally, I put the matter of surgery up to the lady very strongly, and warned her that her life was in danger. She was equally strong in refusing to consider surgery, stating that she preferred to die naturally than to be killed surgically. Her husband was in despair, and begged me to try anything else I could think of.

I decided to make an effort to electrocute the fetus by means of galvanism, explaining that it was an unknown procedure and might or might not be accompanied by risks. They were willing to take the risk. A small asbestos pad saturated with physiological salt solution was placed on the abdomen, over the mass within, and into the uterine canal a large sound, the vaginal portion of the metal being insulated by rubber tubing. Make-and-break shocks were used. 200 milliamperes was all that the patient was willing to endure; I, therefore, placed her under light obstetrical anesthesia, and gave her several make-and-break shocks of 500 milliamperes at 45 volts.

No after effects nor reaction were noted. I watched her very carefully. A few days later, her pain disappeared. In three weeks, I was confident that I could detect a reduction in the size of the mass. In six weeks there was no doubt that the mass was getting smaller. In six months it was no longer palpable. Menstruation reappeared normally three months after the procedure.

I think that this report contains reasonably certain evidence of an ectopic pregnancy, killed by galvanic shocks, and absorbed. One case is of no more value than to indicate a path which should be further investigated.

FOR CHECKING FURUNCLES

Prof. A. Schule (Freiburg i. Br.) finds that all methods with which suction glasses or plasters are used, are practically unsuitable, because they operate much too slowly. The following treatment is best: Cauterisation of the central focus with a needle as thick as a knitting needle under local anaesthesia (proved perfectly harmless by 14 years' experience!) (ethyl chloride narcosis only with furuncles of the face!). To begin with, two superficial pomphi are made with a 2% Novocain solution, the needle is then inserted into the centre which is previously marked with an aniline pencil, and 0.5 cc. is deposited very carefully and slowly. This is followed by the almost painless thorough central cauterization, right through down to the subcutaneous tissue. A very fine, self-twisted wick of cotton wool, soaked in tinct. iod., is introduced into the cautery canal, over this a compress fixed with adhesive plaster. Renew daily, keep the canal open, remove obstructing scab substance, shave the surrounding skin and treat daily with spirit. saponat., alcohol, and ointment. (M. m. W. No. 50, 1924.)

SURGICAL PROCEDURES IN JAUNDICED PATIENTS

A practical application is made by E. Starr Judd, Rochester, Minn. (Journal A. M. A., July 11, 1925), of the work of McNee, van den Bergh, Aschoff and Mann to the surgical treatment of jaundiced patients. The most valuable aid in the handling of jaundiced patients is the van den Bergh test for the quantity and quality of bile in the serum. Much has been accomplished in the preoperative treatment of jaundiced patients, which means more than just the intravenous administration of calcium. Judd believes that in deeply jaundiced patients the common ducts should usually be drained with a tube, and the gallbladder should be drained if necessary, but not removed. Hepaticoduodenostomy is the procedure of choice in cases of postoperative stricture. Cholecystogastrostomy offers considerable relief in certain types of inoperable malignant diseases, and also seems helpful in cases of hepatic infectious jaundice. Multiple needle punctures in cases in which the liver is badly damaged allow a certain amount of blood and fluid to drain out, and may tend to restore the function of the liver.

* * *

Jones: "Come over as quickly as you can, doctor. My wife has fallen and broken her leg".

Specialist: "Which leg is it?"

"The left one".

"You'll have to get some one else then. I specialize on the right leg only."—Judge.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
Terminal Building, Lincoln, Nebraska.

F. A. Long, M. D., Editor..........Madison, Neb.
R. B. Adams, M. D., Associate and Business Manager, Central McKinley Building, Lincoln, Neb.

COMMITTEE ON JOURNAL AND PUBLICATION.
F. A. Long, Chairman..........Madison
W. O. Bridges..........Omaha
B. F. Bailey..........Lincoln
R. B. Adams, Ex officio..........Lincóln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewriten, double-spaced, not the carbon, submitted.

Reprints should be ordered from the printer, The Huse Publishing Co., Norfolk, Neb.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. X October No. 10

TERMINAL DISINFECTION AND FUMIGATION

Much confusion has existed as to what constitutes proper disinfection and proper fumigation of the home at the end of the period of quarantine on account of an infectious or contagious disease, and a vast amount of very careless, so-called disinfection and fumigation has been done under the direction of physicians who should have known better.

Flippantly telling people to put a few drops of carbolic acid in the water for a bath, and to burn a little sulphur or to burn a formaldehyde candle in the house, has all too often passed as the professional (and, therefore, supposedly official) direction to the head of the family of the afflicted.

The Nebraska State Bureau of Health has recently promulgated the following rules—and they are none too stringent:

"TERMINAL DISINFECTION CONSISTS OF: Bathing the patient and those in contact with an antiseptic solution. This may be done by giving a bath with soap and warm water, then washing off the body with a mild antiseptic solution. Bichoride of mercury in strength of 1 to 5000 is recommended for this purpose.

"The house should be hermetically sealed, and formaldehyde candles in twice the quantity specified on the box should be used for a period of eight hours. If formaldehyde candles are not used, four ounces of formaldehyde for every 1000 cubic feet of space; if formalin is used ten ounces for every 1000 cubic feet of space. The temperature should be seventy-two degrees F. (twenty-two degrees C.) It must be remembered that formaldehyde must not be used in a cold room. Humidity or moisture of the air is necessary and may be obtained by sprinkling the floors freely with warm water, or by placing a vessel of steaming water on the stove."

A SURVEY ON PRESCRIPTION WRITING

It is interesting to note (Editorial, J. A. M. A. Sept. 5) that a survey recently made shows that at the present time upward of 75 per cent of physicians' prescriptions call for U. S. P. products.

It had been generally thought by careful observers that too many prescriptions written, particularly by the younger members of the profession, called for proprietary articles such as Peahen's Bromides.

"The investigation revealed clearly that the filling of prescriptions is not, as has been believed, largely a matter of transferring a proprietary or secret formula preparation from one container to another as was largely the case twenty years ago. The results are encouraging in their indication that physicians are holding in large measure to the ideals urged on them when students by their instructors and emphasized by the Council on Pharmacy and Chemistry."

THE CONSULTANT AND THE GENERAL PRACTITIONER

WHAT RELATION SHOULD THE CONSULTANT BEAR TO THE GENERAL PRACTITIONER? WHAT DO YOU THINK OF CONSULTATIONS BEHIND CLOSED DOORS?

In the questionnaire submitted to the members of the Nebraska State Medical Association the above query brought forth a most enlightening discussion. The majority favor consultations in the presence of one or more of the family and argue that a frank open discussion of the case in the presence of friends of the patient inspires confidence in the sincerity and integrity of the doctors. We read:

"I would prefer that a consultant in my case 'speak out in meetin' .' I have seen consultants, in the country, go behind the barn and talk things over. They usually talk politics and current events. The open consultation protects the attending physician from anything the consultant may say in his absence, as well as the consultant from anything the attendant may say afterwards. This is presuming that doctors may be dishonest, and sometimes they are."

"In the first place, we look upon the consultant as a man thoroughly trained in general medicine, in point of medical knowledge above the general man, and his relation should be to advise as to the best management of the case in question; to confirm or set aside the diagnosis, but in a spirit of helpfulness and kindness, and not to scurry around and try to capture the patient, from the general practitioner. Splitting of fees as it is practiced today is a most reprehensible practice."

"The consultant should act as a consultant and not as a dictator, when called to see a patient with the family physician. There is a vast difference in acting as a consultant and in acting as a dictator and usurper. I am opposed to consultation behind closed doors. It creates a suspicion in the minds of the friends and relatives of the patient, besides they deserve to know what the doctors think."

"Consultant should not have his hands tied when called into a case. He should be open and above board in his diagnosis and treatment. In the same way he should refuse to accept the case for further treatment unless at the desire of the physician already in charge."

"An ideal consultation depends upon, first, the willing desire of the attending physician to receive help; second, the unselfish effort of the consultant to give help, and third, both thinking only of the patient's welfare and not their own. These conditions seldom obtain. The exigencies of local competition render it almost impossible that they may obtain when the consultant is a local competitor. Therefore, consultations are never ideal and seldom of much real value when between local competitors. Circumstances should determine answer to second question.

"The consultant should give to the physician in charge an open frank statement of the very best in him, whether it concurs with or is adverse to policy already pursued. Consultations behind closed doors must cease. Some responsible person of the family should be just as well informed of the conditions as the consultants are able to make him and such a practice lends confidence to the public in the medical profession."

"The consultant should bear to the general practitioner a helpful relation. He should share in the responsibilities; he should be an advisor, not a dictator. Consultation behind closed doors is seldom necessary. Occasionally there are technical matters to discuss which had better be considered privately, for the patient and the friends are not interested in the technic of medical procedure."

"That of a fellow practitioner. There should exist no hypocrisy or dishonesty on the part of the former; plain facts should be developed and stated concisely but of course with nothing but the kindest regard (tact) toward the general practitioner. It (closed doors) is a damnable practice indulged in only by the antedeluvian profession."

"Absolute brotherly equality, both toward each other and toward the patient. Closed door methods should be abolished in all walks of life. An honest doctor has nothing to conceal."

"Relation should be that of frank and friendly cooperation, not condescending superiority or hostile criticism on part of consultant. He certainly should know his little corner of the medical field better than the general practitioner knows the whole field. Welcome family and friends to consultation room. If both doctors are well-trained and honest they have nothing to hide."

"The relation should be that of one confrere consulting with another lest they leave some possible point forgotten, fail to discover some evidence that shall definitely diagnose and intelligently indicate a line of treatment. A consultation may be behind closed doors but the results of it should be open and freely communicated to the patient or friends. The honest consultation needs no secrecy."

"The consultant should give his best advice and under no circumstances assume any responsibility except in an advisory capacity. Consultation behind closed doors should be relegated to the past—we should not have to resort to secrecy—an open frank statement of facts at hand never would hurt anyone's feelings."

"I have never been in favor of consultations behind closed doors. Neither do I believe it wise to keep your beliefs from patients and relatives as to what you believe their disease is, or what your prognosis is. Any mollycoddling always breeds troubles and loses the confidence of the public. The day of mystery in medicine is past."

"The consultant should support the practitioner in every way short of running counter to the best interest of the patient. No closed doors!"

"The consultant should advise the general practitioner openly and without criticism. There is no necessity for secret consultation between intelligent men."

"In so much as the patient bears the expense—he is surely entitled to the opinion of the consultant—reasonable diplomacy should also be used."

"He should not only briefly state his diagnosis, but he should state his findings in the case and the facts by which he arrived at his diagnosis. This should also hold true with refered cases. If you mean out of the presence of the family, I am opposed to it. The general management and facts of the case should be talked over in the presence of the family. Then they can see if the attending man was doing his job poorly or with reason, because all men who use consultants are not 'nuts.' This is more fair to the consultant—he states himself in his own way; to the family, they get information first hand; to the attending man, he is not suspected of patching up the consultant's opinion. Technical points may be discussed in private."

"There should be more consultations but the consultant must come off his high horse and cooperate and absolutely return the patient to the general man. Professional jealousy must be done away with. Closed door consultation is right as the patient's family and patient cannot understand technical terms and are apt to form an erroneous opinion."

"Cordial and honest, usually the general practitioner is the best man and altogether the more useful to the sick. Too much specialty is ruining the profession and robbing the people."

"If practitioners were frank and sincere and consultants honest and generous there would be no need of closed doors. The millenium is not yet here."

"The consultant should be one who can render service to the patient and assistance or instruction to the attending physician. He may or may not be in a position to give the patient better care. The calling of a consultant, however, or the referring of a patient to the specialist in some cases should be done. The general practitioner should not endeavor to employ the consultant for the purpose of enabling him to hold a patient for the care of whom he is inadequately equipped or unprepared by experience to treat."

—Palmer Findley.

ACTUAL DANGERS OF CULTISM

Unfortunately, the community in which I have practiced medicine for four years, was recently visited by a so-called "Faith Healer." About the same time she arrived, I noticed a supposedly incurable blind woman, who drifted into town, selling neckties and other miscellaneous small articles, presumably as a means of support. I was somewhat suspicious at the time that this woman might be connected with the "Faith Healer's" system, but had no evidence to back up my "hunch." I now find by conversing with my patients, that this blind (?) woman made a house to house canvas, presumably to sell her articles, but never failing to ask of the persons to whom she tried to sell her goods if they had heard about the wonderful "faith healer," and proceeded to relate how the kind "faith healer woman" was treating her for nothing, and how she was beginning to see the light, after having been pronounced incurably blind by all specialists. Certainly a very shrewd and ethical means of advertising—and I have only one regret with reference to this blind advance agent—out of sheer pity for her., I parted with $1.00 for one of her ten-cent ties. (I have always heard Doctors are and always will be, "suckers").

Well, our lady healer went on practicing, unmolested, and her increasing fame spread throughout the country about, and incurables were brought from far and wide, to be healed, at $1.00 per treatment. And my surprise was great when I found that some of the more intelligent would slip down to her house to take treatments at night, so as not to be seen, or criticized.

Coming to the more critical side of my story: About 11:00 P. M. I was called about ten miles out in the country to see a family (patients of mine) who had always been what I considered people of fair intelligence. On entering the sick room, I noticed a lad of ten years, and another of about three years, with marked laryngeal stridor. The mother informed me that the children had "croup," and that they had suffered with sore throats for several days. As they had been taking one of the children to the "faith healer" for an impediment in his speech, they had asked her to treat their sore throats at the same time. It was proven by cultures that both these children had laryngeal diphtheria. Antotoxin was given in large doses immediately, but the boy of ten years, having been sick several days, died. The mother developed a typical diphtheria throat the next day. Delay of the proper treatment, without a doubt, caused the older child's death.

Another instance: A short time after the above incident, I was called to see a young man who was having convulsions. When I arrived, however, the convulsions had subsided. Inquiring into the history of the case, I learned that he had been suffering severe and persistent headaches for some time, with no relief. Upon advice from friends and relatives, he had gone to the "faith healer" for perhaps a dozen treatments. He said he had no faith whatever in them, and eventually became disgusted. The blood Wassermann proved to be 4 plus, and generous doses of neo-arsphenamine, gave quite immediate relief. This case is just one of the many where delay proved harmful — besides veneral diseases require a report to the State Department.

These two cases somewhat stirred up my feeling and I determined to take immediate steps to do what I could to stop this business. I took the matter up with the Department of Public Welfare, where my letter was referred to the Attorney General's office. I'm thankful for such men in our State Department who come out with definite information. I'm enclosing the letter herewith so it may be printed with this writing.

February 26, 1925

Hon. Lincoln Frost,
Secretary Department of Public Welfare,
Lincoln, Nebraska.

Dear Sir:

You submit to this department a letter from Dr. Chas. F. Heider to you, in which he inquires as to the right of so-called "Nature Healers", " to make diagnosis and do surgical dressings".

In answer to Dr. Heider's question I call attention to Section 8167, Compiled Statutes, which makes it a misdemeanor to practice medicine without a license so to do, and to Section 8168, Compiled Statutes, which says among other things that

> "Any person shall be regarded as practicing medicine__________who shall operate on, profess to heal or prescribe for, or otherwise treat any physical or mental ailment of another".

and further provides that the provision of statute shall not be construed to apply to

> "nurses in their legitimate occupations, nor to the administration of ordinary household remedies, nor to affect the practice of their religious tenets by members of any church; provided they do not prescribe or administer drugs or medicine nor perform surgical or physical operations nor assume the title of or hold themselves out to be physicians or surgeons".

Assuming that the so-called "Nature Healers" have no license to practice medicine or surgery, and are not engaged in the practice of their religious tenets as members of a church, I am of the opinion that it is unlawful for them to treat or profess to heal any physical or mental ailment of another.

Very truly yours,
O. S. Spillman, Attorney General,
By Geo. W. Ayres,
Assistant Attorney General.

If such cults are practicing in your community, they should be stamped out immediately. My main object in writing of these experiences, is to point out to our Committee on Medical Legislation that there are definite and vital reasons for not allowing the untrained, illiterate practitioners of cultism to work their graft on the layman, to whom a "doctor" is simply a "doctor".

In closing, I want to assure you that pressure was brought to bear upon my competitor, and in a few days she left here for parts unknown — the same place she came from.

— Chas. F. Heider.

ALLERGIC AND TOXIC PROPERTIES OF LENS PROTEIN

Of eighty-six patients tested by Sanford R. Gifford, Omaha (Journal A. M. A., Aug. 1, 1925), with lens protein, 12.6 per cent gave positive dermal reactions. Of those giving positive skin tests, six showed unusual postoperative ocular reactions, which may well be interpreted as due to their sensitization to lens protein. In a further case with a very severe reaction there seemed no doubt of this. It was found possible to sensitize animals by injections of lens protein, so that discission produced an increased ocular reaction; but this occurred most often in animals treated so intensively as to be immunized to lens protein. In eight patients with negative skin tests, ocular reactions, apparently due to absorbing lens matter, occurred, indicating some toxic factor, not depending on anaphylaxis, in the lens matter itself. Normal lens matter, showed toxicity when injected into the anterior chamber of the eyes of animals, but cataractous lens matter was apparently much more toxic, nine of fourteen animals showing more marked reactions from the cataractous lens, and none more marked from the normal lens. There is evidence that autolysis of the lens proteins occur, with the production of leukomains and allied products, which may be toxic, and that the chemical differences between cataractous and normal lenses can explain the greater toxicity of cataractous lens matter. While endophthalmitis Phaco-Anaphylactica, in the sense of Verhoeff and Lemoine, undoubtedly does occur, a large number of reactions to lens substance cannot be explained as anaphylactic, and perhaps a majority of such reactions are due to the toxicity of lens matter itself. Hence a better name for the whole group of reactions is that of Straub, "endophthalmitis phacogenetica."

EDITORIAL PARAGRAPHS

New ads in the Journal are Midwest Optical Co., French Lick Springs Hotel Co., Kansas City Chemical Society.

An architect is a man who makes you do what you do not want to do, and makes you like what you do not want to like.

What a wonderful pastime is fishing! Overseas this summer the writer saw one million persons fishing with hook and line; he saw not one catch a fish.

The attention of the reader is called to the quality of the fillers used in the advertising pages of this Journal. And while you are looking at them. read the ads.

The editor of Hygeia is authority for the statement that iced water, even at meals, when taken in small sips, rarely interferes with digestion or produces unpleasant symptoms.

Twenty-five grains each of menthol and gum camphor dissolved in an ounce of liquid petrolatum makes an unexcelled earache medicine. Pain limited to the membrana tympani is relieved almost immediately.

The reader will be interested to know that "Modern Aspects of Nutrition," by Dr. Victor E. Levine, now running in the Nebraska State Medical Journal has created a considerable demand for extra copies of the Journal.

When a man plays golf because it gives him "pep" (whatever that is) and forgets to mow his lawn; or when he lets his wife raise and peddle garden vegetables to supplement the income,—well, the editor knows such a man.

Radium necrosis has been added to the list of diseases. It is an occupational disease resulting from minute quantities of radium being introduced into the mouth and lodging about the teeth, producing necrosis of the maxilla.

The Winslow commission on room heating found that ideal room ventilation is obtained by providing a small amount of cool, fresh air, to counteract the occurrence of warm, moist and still air, rather than by pouring in a large volume of warm air.

The editor "slipped a cog" and is in disgrace. A non-medical doctor was mentioned in the September number as having made a trip to Europe. Really, isn't it remarkable that anyone but a true medic could get enough money to take a trip overseas?

Dr. Morris Fishbein says a moron is "a person who has been tested mentally and found to have a slight grade of mental deficiency, sufficient, however to place him among those classed as feeble-minded;" and that the newspapers' use of the term as a mentally defective criminal who attacks women and girls, is wrong.

Dr. Abraham Myerson, professor of neurology, Tufts Medical School is inclined to minimize the importance of heredity in the onset of mental disease; he is convinced that it is rare for a mental disease to persist, unaltered for more than two generations and that it is the tendency for psychiatric families to die out.

It has been pretty thoroughly proven that the so-called pluriglandular therapy is based solely on the effect of the small amount of thyroid content in the articles offered. The belief of medical men whose opinions are entitled to respect, is, that all the internal secretions, except thyroid, if administered through the stomach, are so altered as not to produce any systemic effect whatever.

Members of the medical profession could do no greater service to the public than to spread the knowledge that one dollar's worth of wheat, cooked whole, or ground in the family coffee mill, will make fifty dollars worth of the very best breakfast food. It will be just as good as any so-called "Whole Wheat" on the market and will be a lot better for the family purse.

The editor learned quite incidentally the other day that this magazine has become the doctors' ladies' home journal. This may seem like a pleasantry, but it is a significant thing that the wives of the doctors take enough interest in their husbands' profession to want to read the Nebraska State Medical Journal. Doctors with such helpmates will succeed, if feminine interest and energy can compel success.

The executive officer of the Minnesota State Board of Health says 6% of the births in that state are attended by midwives. Response to an inquiry from Dr. W. H. Wilson, chief of the Nebraska Bureau of Health indicates that less than one-half of one per cent of births in Nebraska are attended by midwives. Our health regulations are worth while.

Our Nebraska law does not, in a legal way, recognize midwives and it is only in the metropolitan cities, that midwives do much obstetric work.

SOUND TEETH VERSUS CLEAN TEETH

The popular spread of the idea that clean teeth and sound teeth are almost synonymous has been largely responsible for the extensive campaigns to promote the use of the toothbrush. Comparatively few dentists or physicians have attacked the soundness of this conception, and it is, therefore, significant to note that Dr. Harold Cross, Director of the Forsyth Dental Infirmary for Children, takes occasion in The Nation's Health, September 15, 1923, to point out the fallacy in the statement.

According to his investigations, 96 per cent of the children arriving in America from the southern part of Europe have sound teeth, while 96 per cent of American children possess defective teeth. The outstanding fact is that the vast majority of foreign children have no experience with the toothbrush until they enter American schools.

Good teeth are determined by the constitutional organization of the child and are not dependent upon the toothbrush. Caries develops, regardless of daily cleansing, because the development of teeth is dependent mainly upon prenatal influences. The adequate diet of the pregnant woman, so that it contains milk and the leafy vegetables, as well as other sources of calcium, phosphorus and other mineral constituents, is of far greater protection against decay than dependence upon the toothbrush during the years after birth. Hence it is patent that the field of preventive dentistry is not limited to the types of service offered to school children, but must be included in the public health service, such as is practiced in prenatal clinics. The reparative phases of dentistry can cope with the needs of school children and can check the destructive processes. Reparative dentistry, however, has thus far shown itself unable to control or, indeed, decrease dental decay as it presents itself among children entering upon school life.

ONE TOUCH OF NATURE

One by one they leave us,
  Our friends of yesterday;
With agony unchartered we
  See them snatched away.
And none can ever take their place,
  For none will ever stay —
And stand as they stood,
  Those old friends—
Our teeth of yesterday.

— D. B. E.

AMERICAN BOARD OF OTOLARYNGOLOGY

The next examination given by the American Board of Otolaryngology will be given at the Cook County Hospital, Chicago, on October 19th, 1925. Application should be made to the Secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Missouri.

AMERICAN COLLEGE OF RADIOLOGY AND PHYSIOTHERAPY

The above named organization will hold its annual meeting October 19-22 at the Hotel LaSalle, Chicago. One and one-half fare R. R. rates will be granted on the certificate plan. The preliminary program indicates a wealth of good things in clinics, in demonstrations and scientific papers.

The secretary is Dr. Roy W. Fouts, Omaha.

FOURTH ANNUAL PHYSIOTHERAPEUTIC CONVENTION

The fourth annual meeting of the above body will be held at the Drake Hotel, Chicago, October 12th to 16th, 1925. A very wonderful program of scientific papers and clinics has been prepared.

THE SOCIETIES

At the **Eleventh Councilor District Medical Society** meeting at North Platte, August 28th, Dr. D. T. Quigley, Omaha, was the guest of honor, and gave an address on cancer, illustrated by slides made from his own drawings. Dr. C. A. Selby, North Platte, councilor, and Dr. C. F. Heider, Sutherland, gave addresses after the banquet.

An innovation in district medical society work was the joint meeting of the **Third and Seventh Councilor District Medical Societies** at Beatrice, September 10th, Drs. A. D. Dunn, Palmer Findley and C. W. Pollard, Omaha, conducted dry clinics in the forenoon. At the afternoon session Dr. W. A. Myers, Kansas City, gave a paper on "Anuria"; Dr. C. W. Pollard, Omaha, spoke on the "Toxemia of Pregnancy"; Dr. A. D. Dunn, Omaha, made some remarks on "Gastric Physiology and Symptomatology"; President Palmer Findley gave a talk (illustrated by slides) on "Precancerous Lesions of the Uterus"; Dr. Czar Johnson, Lincoln, treated the subject "How to Prevent Malpractice Suits". With one exception the subjects were handled by teachers and research workers, no papers being presented by local members of the district societies. A banquet at the Country Club in the evening was followed by an address on some phases of "Medical Economics" by Dr. F. A. Long, Editor of the Nebraska State Medical Journal, and a talk by Dr. C. P. Fall, Beatrice, touching upon some of his observations in Europe while with Peck's Tour. About fifty doctors attended.

HUMAN INTEREST TALES

Dr. Lynn Putnam, Omaha, has gone abroad for a year's study.

Dr. E. V. Blak, Alliance has gone east to do postgraduate work.

Dr. D. F. Brown has become associated with Dr. J. M. Willis, McCook.

Dr. William A. Moore, formerly of Antioch, has located at Scottsbluff.

Dr. E. G. Jarmin, has become associated with Dr. H. S. Andrews, Minden.

Dr. J. P. Feese has moved from Orleans to Hastings to engage in practice.

Dr. L. B. Lake, Omaha, has been ill at the Methodist hospital for some time.

Dr. and Mrs. G. W. Fegers, Nebraska City, have returned from a trip to Europe.

Dr. and Mrs. John R. Nilsson, Omaha, enjoyed a motor trip to Minnesota last month.

A large residence property in Red Cloud has been leased and transformed into a hospital.

Dr. E. A. Reils, for the past three years a practitioner at Detroit, has located at Brainerd.

Dr. Wm. L. Shearer, Omaha, attended the American Dental Association at Louisville, Ky., in September.

Dr. I. L. Boehr, of Tecumseh, has located at Long Pine and has become associated with Dr. T. J. Lawson.

Dr. Q. A. Kerley, Randolph, submitted to an appendectomy at a Sioux City hospital, early in September.

Dr. Robert E. Farrell, Omaha, has returned from Philadelphia where he took an extended course in surgery.

Dr. Frank Kohn has taken the field at Mason City, Nebr., left vacant by the death of Dr. Arthur Rumery.

Dr. C. J. Miller, Ord, spent the month of September in a big game hunting trip in the Canadian northwest.

The Institution for the Feeble Minded at Beatrice has 850 inmates and at present has room for about fifty more.

The marriage of Dr. William J. Reeder, Cedar Rapids, and Miss Mary Doud, Omaha, September 7, is announced.

Dr. Manuel Grodinsky, and Miss Bertha Ruth Leon, both of Omaha, were married in Chicago, September 4th.

Dr. R. C. Kirchman, has left Dodge, to become associated with Dr. B. M. Kully, 'Omaha, in ear, nose and throat work.

Dr. Homer Davis, Genoa, after many years of active service to the community is about to retire on account of ill health.

Dr. L. L. Wood, Omaha, has purchased the office equipment of Dr. R. D. Balcom at Silver Creek, and will engage in practice at that place.

The marriage of Dr. Byron B. Davis, Omaha surgeon, and Miss Florence Eaton Davis, of Washington, D. C., September 3d, is announced.

Dr. Claude W. Mason, former Omaha physician, who for 19 years has been in the mission field in the Orient, has returned to Omaha to engage in practice.

Dr. Miles J. Breuer, Lincoln, has become associate editor of "Social Science", the national journal of the Pi Gamma Mu, the honorary social science fraternity.

Dr. W. H. Crawford, Rushville, has acquired the Rushville hospital and has had it refitted. The Doctor is at present in Chicago taking special work in surgery.

By the transformation of a large private house, the Harvard (Nebr.) Cottage hospital, came into being and is now open to the profession for the reception of patients.

Dr. W. A. Pearson, dean of Hahnemann Medical College, Philadelphia, on a trip studying medical college plants, visited the Nebraska University College of Medicine, recently.

A prowler robbed the Phi Beta Pi fraternity house, Omaha, and three Nebraska University College of Medicine students are minus some money, clothing and other valuables.

Dr. Charles F. Ulrich, several years ago, a practitioner at Valentine, after taking a special course in internal medicine at the University of Pennsylvania, has located at Omaha.

Dr. J. P. Lord, Omaha, was elected vice chairman of the Orthopedic Section of the American Medical Association; not vice president of the American Orthopedic Association, as stated in a previous issue of this journal.

Dr. Edward Chaloupka, who returned recently from the Mayo Clinic after an operation for the removal of a common duct stone and gallbladder, is now fully recovered and back at his practice in Omaha, Nebraska.

Here is a reported triangle: Dr. E. A. Beard, of Morrill, is about to locate in San Francisco; Dr. F. M. Collins of Mitchell, has moved to Morrill; Dr. A. J. Steward, former councilor of the Twelfth District, now in medical missionary work in China, is about to return to Mitchell to occupy his former field of labor.

Dr. A. J. Miller has been appointed Associate Professor of Clinical Pathology, taking the place of Dr. J. Jay Keegan, vacated by his appointment as Dean. Dr. Miller is a graduate of the University of Iowa College of Medicine, 1917, with postgraduate work in Pathology at the University of Iowa and at Harvard Medical School.

NECROLOGY

Charles F. Ballard, Havelock, Nebr.; Medical College of Indiana, 1879; surgeon for the Burlington Lines since 1890, dropped dead in his office, August 17th, aged about 69 years.

Henry W. Parchen, Phillips, Nebr.; Northwestern Medical College, St. Joseph, Mo., 1882; for many years a practitioner in Nebraska in different locations; died August 27th after an illness of about six months, aged about 68 years.

Arthur C. Rumery, Mason City, Nebr.; Nebraska University College of Medicine, 1905; for twenty years a practitioner at Mason City; died suddenly, August 25th, of an organic heart lesion, aged about 46 years.

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, November, 1925 No. 11

CONTENTS

Page

Diagnosis and Treatment of Ductless Gland Disorders, Wm. Engelbach, M. D. 409

Anuria, Complete and Incomplete, W. A. Myers, M. D. 415

Colitis, Adolph Sachs, M. D. 419

Blindness Which Could Have Been Prevented, Jas. M. Patton, M. D., F. A. C. S. 426

Malignant Degeneration of a Parotid Cell Nest in the External Auditory Canal, A. F. Tyler, B. Sc., M. D., F. A. C. P. 431

Minimum Requirements in the Treatment of Infantile Paralysis, H. Winnett Orr, M. D., F. A. C. S. 434

Some Problems in Reconstructive Surgery, Czar C. Johnson, M. D., F. A. C. S. 435

Acute Retrobulbar Optic Neuritis of Paranasal Sinus Origin, W. A. Cassidy, M. D. 439

The Management of Hypertension, George P. Pratt, M. D., F. A. C. P. 440

Page

Hemophilia, With Report of Two Cases, Michael G. Wohl, M. D. 442

EDITORIALS—

The Increase in Membership Dues 444

The Cancer Problem 444

The Missouri Valley Medical Meeting at St. Joseph 445

Etiology, Pathology and Treatment of Cancer of the Cervix 446

Resourcefulness 446

Honoring the "Old Timers" of the Omaha Profession 447

Colloidal Manganese in Psoriasis 447

Editorial Paragraphs 448

A Physiologic Consideration of the Gallbladder 449

The Societies 450

Human Interest Tales 451

Necrology 451

Books Received 451

DIAGNOSIS AND TREATMENT OF DUCTLESS GLAND DISORDERS*

Wm. Engelbach, M. D., St. Louis, Mo.

Mr. Chairman and Members of the Society: I need not stress my gratitude for this generous reception and for the expression of commendation in Dr. Dunn's introduction, which, however,I must caution you to discount.

To conserve time, I will proceed directly to lantern slide demonstrations illustrating a number of fundamental clinical facts concerning the diagnosis and treatment of ductless gland disorders. This discussion will embrace only gross objective signs of various incretory diseases which can be presented from abstracted histories and photographs. Comprehensive medical surveys, comprising a history and physical, laboratory, and special examinations (as blood chemistry, metabolism tests, etc.) have been routinely made in these cases. Differential diagnosis is emphasized and no condition having other probable etiology, as focal or general infection, allergic or systemic disease, has been grouped with these incretory disorders. If a given case had any other anatomical or functional disease, despite prominent endocrine markings, it was not classified as a primary endocrine dysfunction. The insufficiencies of the thyroid, pituitary, and gonadal hormones will receive most attention. A few of the hypersecretory disorders of these and other ductless glands will be presented in contrast with the insufficiency group.

HYPOTHYROIDISM

The familiar condition of congenital hypothyroidism, or cretinism, needs no elucidation. The poor results obtained in the treatment of cretins have compelled a realization of two important facts. They are (1) late and incomplete diagnosis and (2) insufficient treatment.

The urgency of early diagnosis in glandular disorders prevails as significantly as in other diseases. Impressions from the study of a large number of these cases have led to the conclusion that unfortunately the average diagnosis of cretinism is not made under the age of four or five, and this probably accounts for the lack of benefit from treatment in these cases. It may become possible to make the diagnosis of hypothyroidism in intra-uterine life. This then will afford the best opportunity for prevention of this condition. Older clinical studies of pregnant women reveal that a certain percentage develop enlargement of the thyroid gland, and the toxemias of pregnancy occur less frequently in those women having enlarged thyroids. Recent research relative to metabolism has disclosed that a certain percentage of pregnancies have a physiological increase in the basal metabolic rate. We have found the basal metabolism in gestation to vary usually between +15 and +25 per cent. Our attention was first attracted to this subject from the practice of an obstetrician who used this increased metabolic rate as an indication for the interruption of labor. In a number of cases observed throughout pregnancy, we have noted that the increased metabolism, when present, occurs usually as early as the third month, returning to normal soon after the termination of the pregnancy. In these instances the babies at birth were not overweight and had the roentgenographic osseous signs of a normal infant. It is to be hoped that further investigations will prove that a basal metabolic test during gestation is of greater significance than the customary urinary analysis or uterine examination. If cretinism is considered as a hypothyroidism having its inception in the uterus and resulting from the deficient thyroid function of either mother or fetus, this information may lead to the prevention of this disease. The increased size of the fetus, with its consequent abnormality of delivery and the retardation of the mental and physical development of the child during juvenility might be controlled by administering thyroid preparations to those mothers who do not have a physiological increase in the basal metabolic rate during pregnancy. It will be interesting to compare the future growth and development of these children with those whose mothers have been free from the above thyroid signs.

---

*Read before annual meeting Nebraska State Medical Association, Lincoln, May 12-14, 1925.

Concerning postnatal cretinism, which, as has been asserted, rarely comes under observation earlier than the fourth or fifth year, recent investigations offer a means of diagnosis during the first year or even the first month of life. These pertain to simple clinical facts confirmed by x-ray interpretations. Recognition of this condition within the first months of life is imperative because of the very serious mental retardation, the most important factor to be overcome. While these cretins have retarded osseous growth, their physical defects are incomparable with their mental deficiency. If this mental incompetency is to be circumvented, diagnosis must be made early, before development of the nervous system and its activities. A delay of several years renders impossible activation of the normal mental processes.

We have maintained for many years that 70 per cent of the children having anomalous development during the first year, as presented by the following four clinical signs, are hypothyroidism: (1) A weight of more than 8 pounds at birth. (2) Eruption of the first tooth later than the seventh month. (3) Walking later than one year. (4) The use of dissyllables or short sentences later than one year. Exceptions as to the overweight at birth are deformities such as hydrocephalus, monsters, etc., easily differentiated by inspection. The group of mongols and morons have a chronological history similar to that of the hypothyroid child. Differentiation of these conditions (as mongolism from cretinism) can be made by x-ray examination of the osseous system. In conjunction with Dr. Alphonse McMahon, x-ray studies* have been made of the osseous development in various endocrines as compared with normals, from fetal life to the age of twenty-five. We believe that the time of epiphyseal appearance in these infants, particularly those overweight at birth, is an early diagnostic sign, distinguishing cretinism from conditions bearing a semblance to this state and affording definite indication for treatment within the first weeks of life. These x-ray observations in infants of this age (Fig. 1) need apply only to the knee and ankle. We have found that the normal infant at birth, or within the first two weeks following birth, has present the nuclei of the distal end of the femur, the proximal tibia, and at least two tarsal bones (talus and calcaneus). In our opinion infants who are overweight and who do not have this normal development of the osseous centers should at once be placed upon thyroid therapy.

---

*Osseous Development in Endocrine Disorder, Endocrinology, January, 1924.

The marked osseous retardation in all hypothyroid children after birth has long been recognized. Fig. 2 illustrates the difference in size between a cretin and a normal child, aged twelve (both sexes). X-ray observations of certain bones, particularly the carpal, have demonstrated that valuable information may be obtained regarding the thyroid function to the age of nine, at which time all of the carpal bones are normally fully developed. Our studies of cretins at various ages have revealed this same delayed ossification affecting all bones of the body. The elbow, shoulder, pelvis, knee, and ankle, which have normal appearance and fusion of epiphyses later than the age of nine, may be employed as diagnostic study in individuals older than this age.

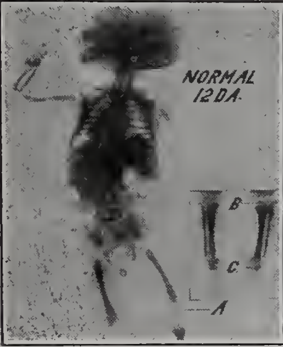


Figure 1

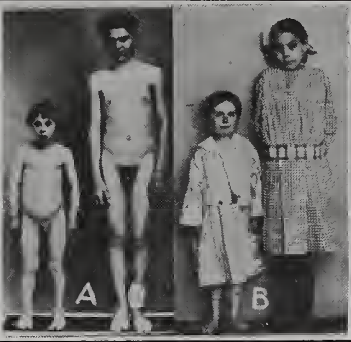


Figure 2

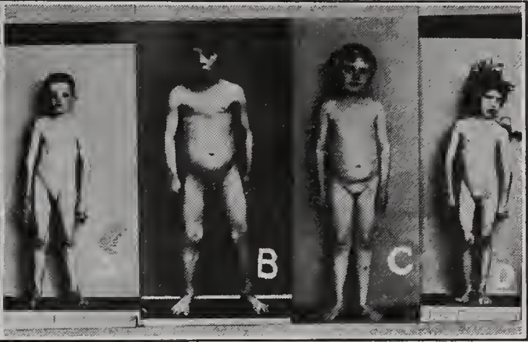


Figure 3

Fig. 1. Normal infant twelve days old. Note the presence of the nuclei of the distal epiphysis of the femur (A), proximal epiphysis of the tibia (B), and two tarsal bones, talus and calcaneus (C).
Fig. 2. Cretins aged twelve (left), both sexes, compared with normals of the same age.
Fig. 3. Four cretins aged twelve. A and D have an anterior lobe pituitary insufficiency added to the primary cretinism. Note the differences in make-up as compared with B and C.

INCOMPLETE DIAGNOSIS

A persistent reason for the unsatisfactory results derived from the treatment of cretinism is incompleteness of diagnosis, or the failure to determine other ductless glandular involvements often accompanying early primary hypothyroidism. The gland most commonly affected secondarily in cretinism is the hypophysis. According to our classification, the cretinistic type very often depends upon the lobe of the pituitary gland secondarily involved. If the anterior lobe of the hypophysis becomes deficient in a primary cretinism, there results the non-obese cretin; whereas if the posterior lobe alone is secondarily affected, there is produced an obese cretin.

Fig. 3 illustrates four cretins at the age of twelve. A and D differ from B and C in that they have osseous retardation and absence of adiposity. We consider A and D classical types of thyropituitarism, consisting of a primary hypothyroidism with a more recent engrafted anterior lobe hypopituitarism.

Fig. 4 is another hypothyroidism to which there was added later in life a hypofunction of the anterior lobe of the hypophysis, producing a thyropituitary (anterior lobe) insufficiency. This case is an example of how the disorders of the ductless glands dovetail into other fields of medicine. Note the internal strabismus, a condition present in about 80 per cent of cretins. This defect might be due to decreased orbital osseous growth in hypothyroidism, with a consequent distortion of the globe of the eye. Its axis is either too long or too short. A constant effort to adapt the lens for focusing of the rays of light on the retina in such abnormal refractions produces the internal squint found in these hypothyroid children. It is not the intention to state, however, that mechanical methods should not be applied to correct these errors of refraction, as well as the malocclusion of the teeth almost always present in these children. The mere fact, however, of the occurrence of these ocular and dental defects should give rise to the question as to their possible etiology. The retarded ossification wields its influence in the field of rhinology, as the proper development of the nose and sinuses is dependent largely upon normal osseous growth. At birth the antrum is the only sinus present, the frontal, ethmoidal, and other sinuses developing after birth. Any retardation to osseous growth must necessarily affect the conformation of these cavities. The retrousse nose and other facial deformities present in nearly all of these children are external evidences of this effect.

When the posterior lobe of the hypophysis is involved secondarily in a primary cretinism, there results the obese cretin, contrasting strongly with the type just described. Fig. 5 illustrates this type of thyropituitarism. This patient had a classical chronological history. The weight at birth was 10 pounds. The first tooth appeared at fifteen months. She walked at two years, was not able to talk until the age of three, and was not talking well even at the age of nine, when first observed. The mentality was much retarded.

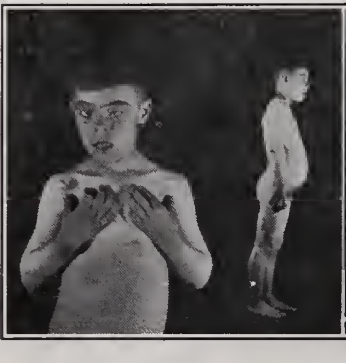


Figure 4

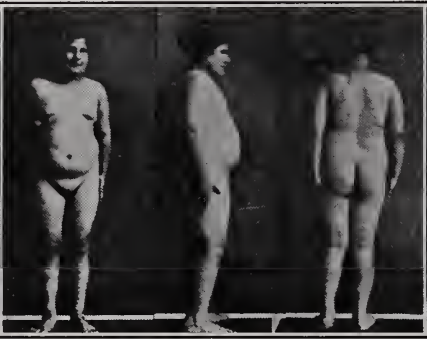


Figure 5

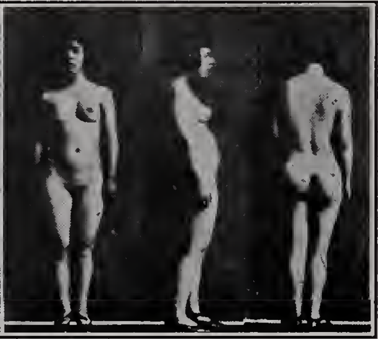


Figure 6

Fig. 4. Thyropituitarism, consisting of a congenital hypothyroidism to which was added later an anterior lobe pituitary deficiency.
Fig. 5. Thyropituitarism, consisting of a congenital hypothyroidism and a later secondary posterior lobe hypopituitarism (obese cretin).
Fig. 6. Juvenile hypothyroidism, with early adolescence and appearance of secondary sex characters.

It is interesting to note how these two types (obese and non-obese) occur in the various incretory disorders. These two extremes exist in adult hypothyroidism (shown later), the obese, known as myxedema, and the non-adipose or emaciated, known as cachexia strumipriva. In the pituitary disorders there is the non-adipose uncomplicated anterior lobe hyposecretion, as compared with the obese type, in which the posterior lobe is deficient, either alone or with an anterior lobe involvement. The gonadal disorders also embrace the obese and non-obese varieties, as exemplified in the emaciated and the fat castrates.

The value of complete, as well as early, diagnosis in cretinism is understood when considering treatment. For instance, if a thyropituitary disorder is treated as a simple hypothyroidism, the results are unfavorable. A thyropituitarism requires substitution of the involved pituitary lobe, in addition to thyroid therapy.

The next simple diagnostic clinical point, relating more to partial hypothyroidism, because more readily overlooked than to cretinism, is demonstrated in Fig. 6 and refers to the early maturity of hypothroid individuals. The menses of this patient (Fig. 6) first appeared at nine and one-half years. You will note that the secondary sex characteristics are present. In the latitude in which she lived, we would judge that the normal age of maturity in the female is between thirteen and fourteen. The histories of these patients show that the great majority of hypothyroidisms in the female have the menses before the age of twelve, many of them between eight and eleven. We regard this early adolescence as a very positive sign. This functional attribute applies to the menopausal age as well as to adolescence. Women who have periods after the age of forty-five probably have some insufficiency of the thyroid. Many of these menopause cases seek medical advice for various symptoms not attributed to endocrine disorder, as backache, headache, reflected pains, etc. When no basic cause is discovered, in the presence of a history of the menses continuing after the age of forty-five, thyroid treatment is often found remedial. The inference is, therefore, that the thyroid hormone is inhibitory to the generative organs. When it is reduced or absent, the gonadal function occurs too early and in later life in the female the ovarian function continues longer than normally. Fig. 6 may be compared with an anterior lobe hypopituitarism (Fig. 9), the two types being opposite as to generative function and the age of adolescence.

Fig 7 is presented to differentiate hypopituitarism from hypothyroidism, or myxedema, not specifically for the education of the reader, but in acknowledgement of former diagnostic error in the differentiation of myxedema from pituitarism, both of which were treated for a time as myxedema. Hypopituitarism, rather than reacting to thyroid treatment, frequently is exaggerated by it as to gain in weight and other symptoms, particularly those of the cardiovascular system. Comparison of the pituitary insufficiency (A) and the myxedema (B) shows that the configuration of the heads is very different. The pituitary deficiency has the hexagonal type of face, with angular peaked bones, whereas the myxedema has a rounded facies, with blunted features. The hypopituitarism shows the cervical region almost free from adipose tissue, all markings being evident. The myxedema has a short, rounded neck, with the fat padding in this individual case forming a complete collar. A supraclavicular padding is characteristic of myxedema, rather than the fat collar. The dorsal hand and foot padding of B contrasts definitely with the absence of panniculus adiposus in these regions in A. The panniculus in A is limited almost entirely to the girdle regions, with no involvement of the terminal extremities. In B the adiposity is rather uniform in distribution, extending from the cervical region over the entire body, including the dorsa of the hands and feet.

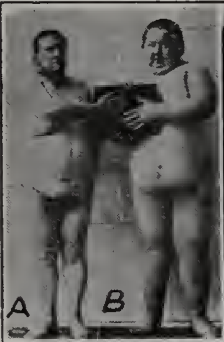


Figure 7

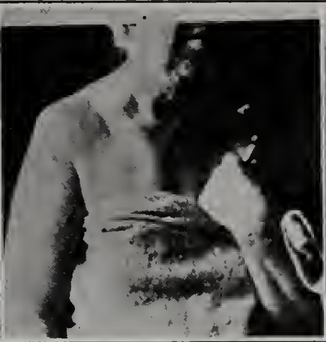


Figure 8

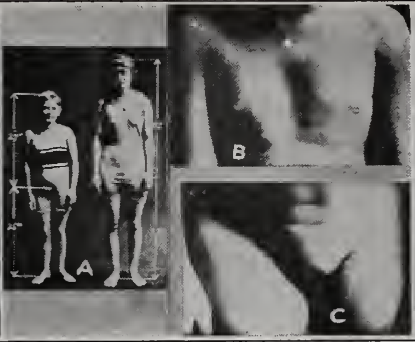


Figure 9

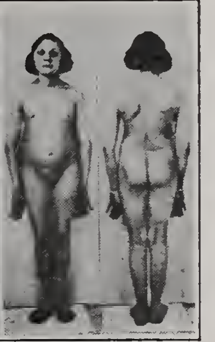


Figure 10

Fig. 7. Comparison of a bilobar hypopituitarism (A) with a myxedema (B).
Fig. 8. Supraclavicular fat padding of myxedema.
Fig. 9. Comparison of an anterior lobe hypopituitarism (Lorain-Levi type) aged eighteen (left) with a normal (A). Virgin mammae (B) and mons (C) of this case.
Fig. 10. Anterior lobe hypopituitarism with complete amenorrhea to the age of twenty-four.

Ordinarily, as stated, the cervical adiposity of myxedema consists of fat padding located above the clavicles, posterior to the thyroid gland, as shown in Fig. 8. The localized adipose depositions supraclavicularly and on the dorsal hands and feet are transient, sometimes apparent for only an hour or two. They are influenced by seasonal and climatic changes and the menstrual epochs.

PITUITARISM

We wish to discuss only a few classical cases of pituitary disorder, limiting our subject to (1) pure anterior lobe hypofunction (Lorain-Levi type) and hyperfunction (gigantism and acromegaly); (2) simple posterior lobe insufficiency (juvenile adiposity); (3) bilobar deficiency, combined anterior and posterior lobe involvement (Frohlich's syndrome); (4) diabetes insipidus; (5) macrogenitosomia (pubertas praecox), contrasted with hypopituitarism; and (6) pituitary headache, epilepsy, and hibernation. The terminology of pituitarism is based upon our classification* attributing these syndromes to disordered function of the lobes (anterior and posterior) of the hypophysis, rather than to lesions at the base of the brain in the neighborhood of this gland, as proclaimed by the French school, initiated by Camus and Roussy. According to our classification, the hypophysis consists of two lobes, the anterior, comprising the epithelial portion, and the posterior, including the pars intermedia, the pars nervosa, and other portions as defined by anatomists and physiologists.

PURE ANTERIOR LOBE PITUITARY INSUFFICIENCY (LORAIN-LEVI TYPE)

Pure anterior lobe pituitary insufficiency in both sexes has as its dominant signs(7) retarded osseous growth and(2) diminished function and development of the genital tract in the absence of other definite etiology. Fig. 9 (left) is a case of this type, a girl eighteen years old who had never had a period. You will note that her lower measurement (symphysis to soles of feet) is 25 inches (63¼ centimeters), as compared with an upper measurement (symphysis to vertex of head) of 27 inches (68¼ centimeters). She has no obesity, indicating that the posterior lobe of the pituitary gland is normal in function. The mammae (B) and mons (C) are infantile. This case is in strong contrast to the hypothyroid girl nine and one-half years old shown in Fig. 6, in whom the primary and secondary sex characteristics developed at a very early age.

---

*Classification of Disorders of the Hypophysis, Endocrinology, July-September, 1920, Vol. IV, No. 3, pp. 347-365.

Fig. 10 is a similar case aged twenty-four. Fig. 11 is a third illustration of the Lorain-Levi type of individual (aged thirty-six). Neither of these patients (Figs. 10 and 11) had had menstrual periods, and you may note the absence of secondary sex characteristics, as well as the retardation of osseous growth. This exemplifies the incretory influence in gynecological practice. Most of these patients are first seen by gynecologists or genito-urinary specialists. They are usually given local genital treatment to overcome the absence of function of these organs. In order to contrast a bilobar hypopituitarism with a simple deficiency of the anterior lobe, we would refer you to Fig. 12, an illustration of two women thirty-six years old with amenorrhea. A is a pure anterior lobe pituitary hyposecretion; B, a bilobar hypopituitarism. In the former the function of the gland was inhibited early in life, or prior to the adolescent age, as the patient never had had a menstrual flow. In the latter the function of the gland was not disturbed until the age of twenty-eight and consequently the osseous system is normal, having completed its development before the hypophyseal affection. The age incidence of this disorder in these two individuals explains their difference in stature. In the anterior lobe insufficiency (A) there is an absence of adiposity, indicating that the posterior lobe has retained its normal function; whereas in the bilobar involvement (B) the classical girdle adiposity of posterior lobe deficiency is present. In A there is an infantilism of the genital tract, with absence of the secondary sex characteristics, indicative of early or preadolescent hypofunction of the pituitary anterior lobe. In the bilobar hypopituitarism (B) the uterus is normal as to size and form and the secondary sex characteristics are present, corresponding with the normal menstruation and sexual life of this individual from the age of fourteen to twenty-eight, at which time intervals of amenorrhea lasting six to eight months began. In the pure anterior lobe involvement there were relatively few symptoms referable to other systems. On the contrary, in the bilobar insufficiency there were many symptoms referable to other systems, as the special senses (particularly the eye), gastro-intestinal tract (nausea and vomiting), and cardiovascular system (paroxysmal tachycardia).

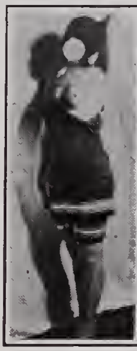


Figure 11

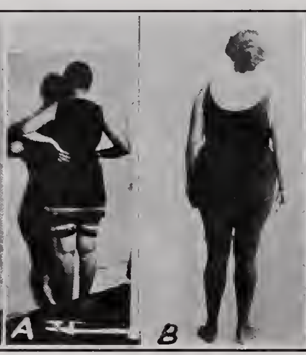


Figure 12

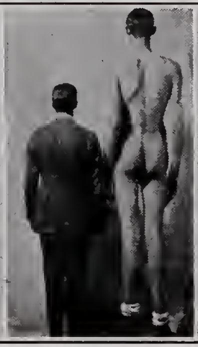


Figure 13

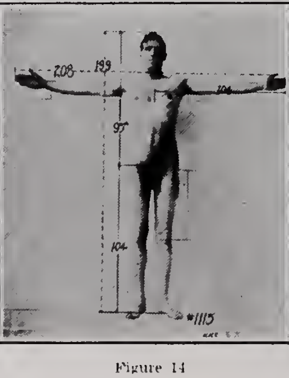


Figure 14

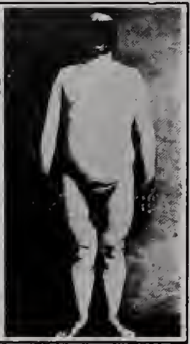


Figure 15

Fig. 11. Anterior lobe hypopituitarism with complete amenorrhea to the age of thirty-six.
Fig. 12. Comparison of a pure anterior lobe hypopituitarism, Lorain-Levi type (A) with a bilobar insufficiency (Frohlich's disease), aged thirty-six.
Fig. 13. Comparison of a giant aged twenty-five (right) with a normal (whose height is 5 feet 10½ inches).
Fig. 14. Eunuchoid gigantism with the hitosry of a transient glycosuria and a prolonged diabetes insipidus.
Fig. 15. Acromegaly, without pituitary tumor, having a diabetes insipidus, together with a marked glycosuria and hyperglycemia.

HYPERSECRETION OF THE ANTERIOR LOBE OF THE HYPOPHYSIS (GIGANTISM AND ACROMEGALY)

It is unnecessary to discuss in detail the well-known states of gigantism and acromegaly. A case of gigantism as compared with the normal individual is demonstrated in Fig. 13. The interesting feature of acromegaly and gigantism is that they present a number of common symptoms, as polyuria and glycosuria, frequently credited to lesions of structures in the neighborhood of the hypophysis as the hippocampal gyrus, hypothalamic region, interpeduncular region, and tuber cinereum, or to the pancreas.

Fig. 14 is a eunuchoid giant who had the syndrome of diabetes insipidus (or pituitary polyuria). Fig. 15 is a very interesting case of acromegaly, who gave the following history. From twelve to thirty-two years of age he had a marked diabetes insipidus. A physician himself, he consulted many of his conferers. He was given various sugar solutions, such as glucose, levulose, and dextrose, in an effort to produce a glycosuria. Until the age of thirty-two no diet taken would produce this glycosuria. From then until the age of fifty-two, when this photograph was taken, glycosuria was rather constantly present, and during the last ten years, when sugar tests of the blood were made, he had a variable hyperglycemia. Polyuria and glycosuria associated with pituitary disorder do not necessarily point to pituitary tumor, for we have carefully selected cases for presentation having no signs of pituitary tumor or of pressure in the neighborhood of the hypophysis. This then is confirmatory evidence that these symptoms of polyuria and glycosuria, and of obesity, amenorrhea, etc., are due to disturbed function of the hypophysis rather than to lesion in the neighborhood of this gland. The case of hypophyseal glycosuria under discussion, which has been observed for many years, presents seeming incongruities. For instance, his diet has very little to do with either the hyperglycemia or the glycosuria. At times he has had a very high blood sugar, with a complete absence of sugar in the urine. At other times a considerable glycosuria has existed, with a normal blood sugar, simulating renal diabetes. These hypophyseal glycosurias do not react to medication as ordinarily administered in pancreatic diabetes and, therefore, their differentiation, depending largely upon the presence or absence of other signs of pituitarism, is important.

(To be Continued)

ANURIA, COMPLETE AND INCOMPLETE*

W. A. Myers, M. D., Kansas City, Mo.

In a recent communication(1) the writer reported a case of recurrent cervical carcinoma compressing both ureters. In this case there was no available evidence from the patient, her sister or two graduate nurses in attendance or from physical examination including catheterizations from the fifth to the twenty-eighth day to indicate that the patient was excreting any urine whatever. After an apparently complete suppression of urine of at least thirty days in which a picture characteristic of long standing anuria presented itself, the patient died and autopsy disclosed no urine in the bladder. Large masses compressed both ureters and bilateral hydronephrosis with hydro-ureters had been produced.

Stimulated to a search of available literature we have found and published a collection of 19 cases of alleged total anuria with a duration ranging between 20 and 29 days and have compiled though not published, 52 cases lasting between 10 and 19 days.

It has occurred to me that it would be valuable to analyze certain criteria for accurate diagnosis of complete anuria of long standing. In evaluation of data at hand three questions inevitably arise: (A) Is the history reliable? (B) Is the clinical picture that of long standing anuria? and (C) Is the pathology found commensurate with the duration claimed for complete anuria?

HISTORY OF LONG STANDING COMPLETE ANURIA

Many reported patients suffering from total suppression of urine studied by the writer, together with his own case, apparently call the family physician only after 3 to 5 days of alleged suppression. Many of these cases do not act or feel sick commensurate with the accepted dangers associated with absolute renal insufficiency. The family physician and the consultant are thus led to open skepticism of the history. In the court of judgment, the physician asks naturally what is the motive here for deception, and if one is discovered the history loses validity. The patient and relatives may be perfectly honest in their narrative of complete anuria, have no knowledge of micturation and still certain amounts of urine be passed during defecation especially by women. This, it appeals to me, may be the greatest bar to accepting a history from patients, their relatives or their nurses. The additional point of exactness in dates is extremely essential though there is little question of there being an excess of twelve to twenty-four hours error in this detail. Usually the patient can state definitely when urine was passed for the last time.

---

*Read at the Inter-Councilor District Medical Society Meeting, Beatrice, Nebr., Sept. 10, 1925.

The history of past illness may throw a flood of light on the probability of anuria. A history of shock following anaesthesia, rupture of abdominal viscus, especially a kidney, surgical operations near, or apart from, the urinary tract as well as thrombosis of the renal vascular supply have been known to precede so-called "pre-renal" anuria. Illness like scarlet fever, tonsillitis, malaria, cholera, erysipelas or other acute illness, and organic and inorganic poisons may be responsible for acute suppression from nephritis, and thus may cause a so-called "renal" anuria. Tuberculosis of the kidney and polycystic kidney are also etiologically important in this type. However, a history of anything simulating a renal calculus is extremely important as it has been shown almost beyond debate that a renal or ureteral stone in early life may entirely destroy one kidney and, after an interval of years, the other being similarly occluded, there may result a sudden and complete cessation of urinary function, without pain, temperature, or other evidences leading to the diagnosis of calculus anuria. Indeed a history of calculi is the most frequent one found in total anuria. Apparently next in importance numerically is malignancy causing compression of the ureters. Other points for investigation for "post-renal" or obstructive anuria, are kinks and strictures of the ureter, congenital or acquired; malignancy, or stones in the bladder; and pelvic tumors and cysts. The history pointing to any of these conditions is of utmost importance when patients or their attendants claim a total anuria.

IS THE CLINICAL PICTURE THAT OF COMPLETE LONG STANDING ANURIA?

Long standing anuria in the classical cases may be more striking for the absence of symptoms than for their presence. When the history alleges suppression of urine for several days—there may be no history of pain and no coma—indeed cases have been reported where on physical examination the only remarkable finding was the absence of urine.

A typical case of long standing anuria may be of any age—a case having been reported over a period of 15 days from birth, with bilateral congenital dilated ureters. Anuria, however, more frequently occurs in adult life, most commonly beyond 40 or 50 years.

The history is the first outstanding feature. Patients usually tell their own story that the onset was gradual or sudden and that they have not passed urine for one to five or more days, and the general health belies the history. Instead of being in coma or convulsions as the average clinician expects with such a history, the patient, says Morris in his Hunterian Lectures on Renal Surgery(2), "tho he may not pass a single drop of urine for several days may yet walk about, eat and do mental work in all the appearance of good health. This fact must never be forgotten if a serious mistake in diagnosis and prognosis is to be avoided." If uncomplicated by infection no marked exaggeration may be found of the physical findings of respiration, pulse or temperature.

Indeed, the opposite may be the rule, each of these evidences of morbid conditions being depressed as in hypo-metabolic states The blood pressure may not be high. The appetite may be poor, fair or good. Many have no pain, and therefore, may sleep well, though restlessness may be dominant, and even drowsiness may shadow a perfectly clear mentality displayed when the patient is spoken to. Vesical tenesmus may occur early or late or may be entirely absent. Motor phenomena, especially twitching and subsultus are all but universally present but usually are limited to single, or groups of, muscles. Convulsions are not the rule and when present are frequently immediately ante-mortem. Perspiration may be profuse, moderate or absent. Vomiting may be absent but may be excessive. Constipation or diarrhea may dominate, and salivation, both prolonged and transcient has been noted. The pupils after a few days are usually contracted, except when convulsions occur when they may be dilated. Coma is not the rule and with few exceptions the condition is not recorded. The nitrogenous bodies in the blood are increased. The course is apparently little modified by conservative treatment, and life has apparently persisted, despite anuria of ten, fifteen, twenty, or even thirty days, or even longer, ending in as remarkable a manner as they had lived—many times the patient speaks or answers questions but a few minutes before life is terminated abruptly, usually by respiratory paralysis, tho less often by convulsions, syncope, or coma.

The same picture may be seen in other cases of anuria broken only by the passage of small quantities of urine. This syndrome we have termed incomplete anuria and will be discussed below.

DO THE PATHOLOGIC FINDINGS JUSTIFY THE DIAGNOSIS OF ANURIA?

Recent experimental work on hydronephrosis, by unilateral or bilateral ureteral obstruction, by Amos, Keith, Scott, Caulk, Hinman, Johnston and others has added enormously to our knowledge of animal pathology in obstructive anuria. They have not only taught us what the microscopic changes in renal parenchyma are at differing periods of ureteral obstruction, and the laws of renal function following such obstruction in animals, but have given evidence leading to more or less accuracy in judging the length of time the ureter has been obstructed, as judged by the size of the hydronephrosis present at death. The work is most commendable and of extreme value. This has, however. been done largely, so far as we are aware, without producing long standing anuria. Amos(3) states that her animals died in 2 days with bilateral ureteral obstruction and Caulk(4) says after simultaneous bilateral ligation he has never seen an animal live in excess of 5 days.

There is available very little material to show that careful work has been done to produce experimentally long standing anuria. It is not possible to produce apparently in animals anuria of such long duration as has been reported in man. This may be due to the fact, apparently accepted, that our present knowledge can not guide us to produce in animals the typical chronic renal lesions common in man. The removal of kidneys in animals by two-stage operation, with suitable period intervening, or removing the only functioning kidney in man, if pathologic, may come near duplicating the clinical condition of spontaneous long standing anuria. Papin and Chabanier(5) make the statement that in man with the removal of the only kidney (about ten cases) and in animals with bilateral nephrectomy "death follows in 10 to 12 days." The writer has found in the literature no confirmation of this statement of prolonged anuria by bilateral renal extirpation in animals but there are three clinical cases collected from American literature in which the removal of the only kidney is noted, the patients living 11, 13, and 27 days respectively. Of these, Polk's is the only well reported case(6) we have found in which the only kidney, congenitally solitary and displaced with dilated ureter was extirpated. Here for 11 days and one hour the patient lived without passing a drop of urine—small amounts of serum, apparently, being removed by catheter. Autopsy reported by Dr. Wm. Welsh showed the entire absence of renal tissue. This was in 1883 and no blood chemistry tests were reported. Here the history was known, the characteristic picture was present, and the pathology was sufficient to justify the phenomenon of alleged anuria. Dr. Polk's courage and accuracy in reporting the case, and his contribution of a valuable and unquestioned case of long standing anuria to our literature is highly commendable.

INCOMPLETE ANURIA

Anuria of the type heretofore mentioned has been known as complete, total, or absolute anuria, the clinical picture is characteristic, and the pathology is quite well established. In such cases there is no evidence of urine being passed and at termination little or no urine is found in the bladder. Strictly speaking the term "anuria" applies to the condition in which there is a total abeyance of renal excretory function. Practically, this rarely exists even in "pre-renal" and "renal" anuria, and in the obstructive or "post-renal" type more or less urine is invariably found in the renal pelves and ureters. Occasionally a case of otherwise total anuria of long duration may pass a small quantity of urine and thus fall into the class of incomplete anuria.

Incomplete anuria, though paradoxical in its terminology, covers exactly a class of conditions found in the literature in which a complete suppression of urine would be broken by the passage of amounts smaller or larger, perhaps only once in the entire period of days or weeks. It is obvious that for purposes of studying renal insufficiency of high grade, the study of such cases are of real value, though they may not be termed complete anuria cases. The relief from renal intoxication to the patient by passage of small amounts of urine may be negligible as proven by the course of the disease and at times by chemical studies on the blood.

Incomplete anuria is of two types. In the first a suppression of urine may be a total anuria except for the passage of very small amounts of high or low specific gravity urine one or more times during the urinary drowth. In the second type, an otherwise complete anuria may be broken by the passage of hundreds of cubic centimeters of low specific gravity urine, the course of the illness at times being modified by no apparent relief.

To illustrate the first type of incomplete anuria Tennison's case(7) of fifteen days of total anuria is reported as having been broken on the tenth day by the passage of only 2 cc. of urine. The case of Scholl and Foulds, accurately reported(8) covered a period of 13 full days of anuria broken only on the 5th day by the passage of 25 cc. of urine. Sir James Paget(9) reports such a case in which a man 74 years old went 22 days without passing urine except for an involuntary urination on the 14th day. Whitelaw's(10) case is reported to have been completely anuric for 25 days except for the passage of 2 ounces on the 13th day. Debove and Dreyfus(11) report very accurately a case of recurrent cervical carcinoma in which no urine was passed for 24 days except once on the 17th day. L. Frank's(12) case of unilateral nephrectomy of a tuberculous kidney is reported to have gone 26 days with no urinary output except 7 ounces the first three days, then 17 days of complete anuria which was broken on the 20th day following operation. Bischoff is quoted by Morris as having observed a man 58 years old whose anuria of 23 days was broken on the 5th, and 14th days only by "very slight intermissions". Such cases are typical cases of incomplete anuria found in literature. In these cases there has been practically a complete suppression of excretion of both water and nitrogenous elements of the urine.

There is a type, however, of incomplete anuria in which an otherwise absolute anuria may be broken by the excretion of almost pure water, the nitrogenous elements apparently largely being retained. Such cases are of extreme interest and indicate the danger of favorable prognosis with the return of low specific gravity urine in otherwise anuric cases. To illustrate this type, Weber is quoted by Morris(2) as having reported a case where a "succession of remissions of polyuria" broke a 30 day renal insufficiency with periods of total anuria. Breslauer(13) reports a man of 41 years, with total anuria of 21 days, who died the day following and in spite of the passage of 500 cc. of clear odorless urine. Anglada's case as cited by Fowler(14), "had no illness except anuria of 13 days" though he continued as a merchant the entire time, when suddenly he passed several liters of urine, though this did not prevent an early death. Autopsy showed one kidney atrophied to the size of a bean, the other enlarged with "ureter exceedingly dilated down half of its length to an obstruction calculus". Bagshawe's(15) case of anuria passed 250 cc. the 8th day, but this did not prevent termination fatally the 10th day. In one of the above cases the blood urea nitrogen is reported to have reached 200 mg. per 100 cc. blood. It is obvious that anuria may be essentially complete with the passage of large quantities of low specific gravity urine.

The condition just described of incomplete anuria has been duplicated in animals. Keith(16), Scott(17) and others have applied rubber bands about the ureters of animals and have been able to simulate almost exactly the obstructive conditions commonly found in man, associated with hydronephrosis. Following such ligation where pressure in the ureters or pelves at intervals forces urine past the obstruction, there are marked changes in the upper urinary tract, and retention of toxic products in the blood, simulating certain clinical cases mentioned above. Thus experimentally it is found as well as clinically, that the high court of appeal in either complete or incomplete anuria is the chemical and physical condition of the blood. If no urine is available, study the blood, that may always be secured.

The operating physiologist and the surgeon alone can be positive as to their cases being absolute anuria cases, for obviously if no renal tissue is left none will function, or if both ureters are ligated and remain so at autopsy, there is proven anuria, total, absolute, complete. No other case reported as total suppression of urine except those known to the surgeons as the work of their hands can be vouched for as absolute anuria cases. Charcot(18) went farther than would be practical in America to prove his case of "hysteric anuria" was free from deception, when he put her in a straight jacket, kept trusted attendants constantly on guard, daily catheterized her frequently and measured all vomitus. He should be commended for this exactness in a questionable case — as also for his attempts at accurate study of the chemistry of the blood and vomitus for proof of vicarious elimination of toxic products. Such diligence deserved an x-ray and a trained cystoscopist to help prove what the accurate diagnosis was in his case of so-called "hysteric anuria".

In conclusion, I will add that there is evidence from a careful study of the literature to state that anuria, formerly much more frequent, is now relatively rare because of refined methods of diagnosis and safe methods of treatment. When seen, the typical picture of well being may too often lead to skepticism of an accurate and valid history. Anuria in man following extirpation of the only kidney has been recorded in American literature, lasting for from 11 to 27 days, a duration far longer than experimental work has been able to duplicate. When the condition of alleged long standing anuria, complete or incomplete, is present one may expect the blood urea nitrogen to be increased, three cases having been reported as high as 170(1), 200(8) and 246*(12) mg. per 100 cc. blood. Such unusual tenacity of life in the face of total or essential absence of urinary excretion has been explained on three quite well supported theories of adaptation to abnormal vital processes: (a) There may be a lowered metabolism in total anuria; (b) there must be an organic defensive mechanism against high grade intoxication; and (c) nitrogenous products may be excreted vicariously.

—815-824 Shukert Bldg.

---

*Equivalent to 527 mg. urea.

BIBLIOGRAPHY

1. Myers (W. A.): Obstructive Anuria — Report of a Remarkable Case. Journal A. M. A. 85: 10-13. (1925).

2. Morris (W.): Renal Surgery. P. Blakison's Sons & Co. Phila. (1898).

3. Amos (B. Shelden): On the Effect of Ligature of One Ureter. J. Path, Boston. 10:265.

4. Caulk (J. R.): Calculous Anuria. The Atlantic Med. Jour. 27:40. (1924).

5. Papin (E.) and Chabanier (H.): Etude Clinique, Physiologique et Anatomique de Deux Cas d'anuria. Jour. d'urologie. 8:335.

6. Polk (Wm. M.): Case of Extirpation of a Displaced Kidney. N. York M. J. 37:171-178. (1883).

7. Tennison: Cited by Roberts: Urinary & Renal Surgery. Lond. 4th. Ed. (1885).

8. Scholl and Foulds: Prolonged Anuria — Report of a Case. Jour. A. M. A. 76:368.

9. Paget (Sir James): Case of Suppression of Urine Very Slowly Fatal. Trans. Clin. Soc. Lond. 2:171-174. (1869).

10. Whitelaw (W.): Case of Anuria Lasting 25 Days, Recovery. Lancet, London 2:460. (1877).

11. Debove and Dreyfus: Cited by Merklin in Monograph on Anuria. (1881). Paris.

12. Frank (L.): Anuria After Unilateral Nephrectomy. Am. Surg. 69:286. (1919).

13. Breslauer: Cited by Fowler (E. P.): Suppression of Urine.

14. Anglada: Cited by Fowler (E. P.): Suppression of Urine.

15. Bagshawe: Trans. Path. Soc. of London. 16: 176-179. (1865).

16. Keith (N. M.) and Snowden (R. R.): Functional Changes in Experimental Hydronephrosis. Arch. Int. Med. 15:239. (1915).

17. Scott (G. D.): Experimental Hydronephrosis. Surg. Gyn. & Obst. 15:296.

18. Charcot (M.): Diseases of the Nervous System. 1879. H. C. Lea. Phila., page 196.

COLITIS*

Adolph Sachs, M. D., Omaha, Nebr.

Colitis is a broad term, and necessarily would cover all the diseases of the colon because irrespective of the pathology at hand, it is the resulting colitis that produces a large share of the symptoms of which the patients complain.

It is not my object to cover all the diseases of the colon in a short paper for such an attempt would be futile. However, it might be well to consider a few important facts about the colon in general and later by citing a few illustrative cases, show the difficulties often encountered in colon diagnoses.

The colon must be considered in differentiating lesions of the lower right quadrant, the upper right quadrant, the upper left quadrant, the lower left quadrant, and abdominal lesions in general, hence, it is the most important organ to be thought of in the differential diagnosis of gastro-intestinal cases.

The large bowel being our human refuse receptacle, is the seat of inflammations, degenerations, tumors, neuroses, and congenital anomalies similar to any hollow viscus, and if we think of them in a thorough systematic manner, less confusion will occur.

A careful history is essential in the diagnosis of all colon cases for oftentimes the history alone will inform us of the pathology present. The colon is an organ that is quite accessible to palpation in most individuals so that tumor masses and inflammations can often be readily diagnosed. Abdominal palpation is a routine procedure in most medical examinations, but digital rectal examinations are frequently neglected, hence valuable information is often overlooked. Rectoscopic examinations are also of great value because this gives us an opportunity of seeing any pathology that is present. Its technique is simple in most cases and can be learned by all who give it proper time and attention. I feel that a routine rectoscopic examination should be made in all cases of colitis, and frequently an organic lesion will be found in cases diagnosed as functional. The x-ray and other special examinations are undoubtedly of value and absolutely essential in some cases, but if we would depend more on our eyes, ears, hands and head, less extensive laboratory procedures would be required.

---

*Read before the annual meeting Nebraska State Medical Association, Lincoln, May 12-14, 1925.

The colon with its haustrations is more often a focus of infection than the tonsils or teeth, but practitioners rarely think of it as such, and hence our foci may be easily overlooked. I do not wish to minimize the tonsil or teeth as a focus of infection, for we all know how frequently virulent streptococci are lodged in root abscesses or the tonsils, but the colon, which is five or six feet in length, contains many pockets, any of which may lodge virulent streptococci. It, therefore, behooves us all to become familiar with the fecal flora so that these foci may be recognized.

The examination of feces is very important, and is frequently neglected or done in a very superficial manner. A test for occult blood is the only test made in many laboratories, and in my opinion is the least valuable of any test that could be made. The presence of occult blood is important, but its presence or absence will rarely change any diagnosis. Malignancies of the colon may be present with no occult blood in the stool, and likewise it may be four plus with innocent lesions. A fund of information can be obtained if only gross examinations are made, but even this is frequently neglected. The color, size, shape and character of the stool, the amount of fermentation, mucus, worms, undigested food, etc., can all be determined by mere inspection and without any laboratory procedure.

I feel that medical schools often neglect teaching their students how to make simple microscopical examination of stools and yet no student is allowed to graduate who cannot make a careful urinalysis. A slide, a cover glass, and a microscope is all that is needed, for the ordinary examination, and one can recognize muscle fibres, starch cells, ameba, etc., with very little practice. Ameba are found in this part of the country far more frequently than most men realize, and are the causative factors in many loose stools. The flagellates are non-pathogenic organisms, but it is surprising how frequently they are found in cases of secondary anemias of unknown origin, and how quickly some of the anemias clear up when the flagellates disappear, and also how quickly the flagellates disappear when suitable treatment for the anemia is instituted.

Kofoid and others believe that the ameba bear a definite relationship to some of our chronic joint infections, and have demonstrated their presence in joint pathology.

The intestinal flora of a breast fed infant is gram positive and consists chiefly of B. bifidus and B. acidophilus. In a bottle-fed infant, B. bifidus and B. acidophilus still predominate, but a larger number of B. coli and streptococcus lacticus and staphlococci are also found. As soon as the child's diet increases and milk ceases to be the main constituent of its diet, the B. bifidus and acidophilus are replaced by B. coli.

There is still a dispute as to the role bacteria play in aiding digestion. It is claimed that bacteria of the colon may hydrolyze cellulose and render it useful to nutrition, a process which is not taken care of by the intestinal enzymes. At present it is safest to accept the conservative view that although the bacteria confer no positive benefit to the organism under normal conditions, they do no harm.

The majority of adults consume a large amount of protein in their diet and the fecal flora is composed of from eighty to ninety-five per cent B. coli and its allied bacteria, B. coli ordinarily is a non-virulent organism, however, under abnormal conditions may produce a great deal of damage, especially in the production of fermentative colitis, pyelitis, etc.

In times past, many human ills were attributed to auto-intoxication, and with this in view, Metchnicoff in 1906, offered his Bulgarian bacillus as a means of destroying B. coli and thus eliminating or minimizing intestinal putrefaction, hence prolonging life.

We now know that B. bulgarius does not lessen the number of B. coli and, therefore, cannot be offered as a cure, but it has paved the way for others to find a method of holding B. coli in check.

Rettger of Yale, has experimented with B. acidophilus, and has shown that this organism can be implanted in the intestinal canal and decrease or practically replace B. coli. It can be given in broth culture, by mouth, by the duodenal tube or by rectal implantation, the former two being more reliable.

B. acidophilus is a gram positive non-motile bacillus, and is non-pathogenic. Two or three days after its administration, these organisms begin to appear in the stool and gradually replace B. coli until after the sixth day, they represent about ninety per cent of the fecal flora. A great deal has been claimed for the value of B. acidophilus in constipation and diarrheas but all men are not agreed as to the real value of this procedure. Personally, I have found the administration of B. acidophilus of value in some cases of fermentative colitis, but it has not been superior to other like forms of treatment.

The colon is under the control of the vegetative nervous system the same as other visceral organs. This system is divided into two great parts the vagus and the sympathetic. These two systems are antagonistic and under normal conditions balance so that we have a normal functioning bowel, however, if we have an overstimulation or paralysis of one or the other, the balance is disturbed and various symptoms arise.

The colon is the receptacle for many of nature's waste products that are about ready to be excreted, hence, very little of digestion is left to be completed in the colon. It is the function of the large bowel to receive the fluid contents of the small bowel and by abstraction of water, it increases the consistency of its contents so that in normal cases a formed stool is passed. The colon has an abundance of mucus secreting glands, and which under normal conditions are an aid to defecation and under abnormal conditions, can be excreted in excessive amounts.

The colon, according to Cannon, is divided into a proximal and distal portion. In the distal portion the material is hard and lumpy and is advanced by rings of tonic contraction. In the proximal portion the stool is soft and waves of contraction may be seen running toward the cecum where they meet the ileo-cecal valve. This reversed or antiperistalsis thoroughly mixes the remaining food mass, aids in the absorption of fluids and finishes digestion. Antiperistalsis ceases when more food enters the colon from the small bowel which is followed by contraction of the cecum and proximal colon, and then some of its contents is passed on to the distal colon.

Malignancies of the cecum rarely have obstructions, which is due to the fact that the stool is soft in the proximal colon; however, the stool is formed in the distal colon and obstructions may occur early.

An excessive amount of fermentation may distend the colon with gas which acts as an irritant so that the food is hurried on and the normal absorption of fluids cannot take place, hence diarrheal stools occur. An abnormal amount of mucous may be secreted the same as would occur by the irritation of any mucous membrance, hence mucous stools. The colon may be spastic so that the progress of the food may be slow, then an abnormal absorption of fluid occurs and constipation results.

The large bowel normally contains a variable amount of gas which is dependent on several factors, namely:

1. Air swallowed with food,
2. Gas produced by fermentation,
3. Air from the colon wall.

The gas produced by fermentation is usually the most frequent, and often causes great distention and distress in colitis. Normally, a considerable amount of gas is absorbed by the colon; however, in colitis, this function is disturbed and it must be expelled. In people over forty the amount of gas is normally increased due to lack of muscular tone of the bowel.

Colitis may be divided into organic and functional types. The organic type has definite pathology, while the functional types have no visible pathology present. The latter group forms that large class of cases known as mucous colitis.

The organic group is as follows:

1. Malignancy of the colon or adjacent structures;
2. Mechanical obstructions such as adhesive bands, pressure of neighboring organs like the uterus, or tumors outside the colon such as ovarian cysts, retroperitoneal tumors, etc.
3. Conditions in the walls of the colon such as diverticulitis, tumors, strictures, etc.
4. Conditions within the colon such as intestinal polyps, extension of inflammation from without like

abscesses of tubal origin, stasis due to heart disease, inflammations, etc.

5. Intestinal worms, ameba and the flagellates.
6. Inflammations such as syphilis, or tuberculosis.
7. Congenital malformations such as megacolon.
8. Degenerations as amyloidosis.

The functional group:

Mucous colitis, caused by:

1. Improper habits in neglecting daily evacuations;
2. Abuse of cathartics;
3. Enteroptoticers and neuroses;
4. Vagotonicers;
5. Abuse of tobacco;
6. Improper mastication, bolting of food, indiscretions and errors of diet;
7. Worry and nerve exhaustion.

Instead of giving test book descriptions of any of the above conditions, I wish to cite a few illustrative cases and show lantern slides which will demonstrate some of the difficulties encountered in colon diagnoses.

The first slide that I wish to show is that of a normal colon.

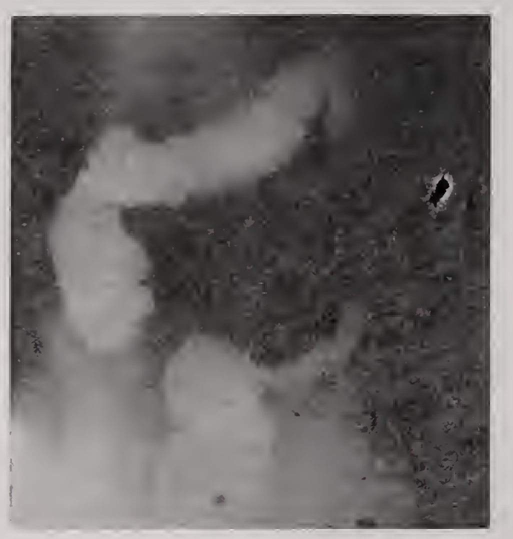


FIG. 1. Normal Colon.

Miss ———, age 24. Complaints: Attacks of pain in abdomen.

Family history: Mother nervous, otherwise negative.

Past history: Usual children's diseases.

Operations, 3. First five years ago, appendectomy and repair of ovary. Second, three years ago, cholecystectomy. Third, one and one-half years ago, adhesions. Felt better for a short time after each operation, but no permanent relief.

Periods: Dysmenorrhea 2 plus. Otherwise negative.

Present illness: Complains of attacks of dull pain in abdomen which bears no definite time relation to food. Has relief of pain on passage of flatus. Uses cathartics at times with relief and at times increasing the pain. Alkalies no relief. Food does not relieve pain. Soft stools at times, with mucous. Feels better when not depressed or nervous.

Examination: Visceroptotic habitus; blushes easily. Head, eyes, chest, negative. Abdomen shows several scars of previous operations. Extremities, negative. Pelvis, negative.

Laboratory: Blood, secondary anemia; Wassermann negative. Urine negative.

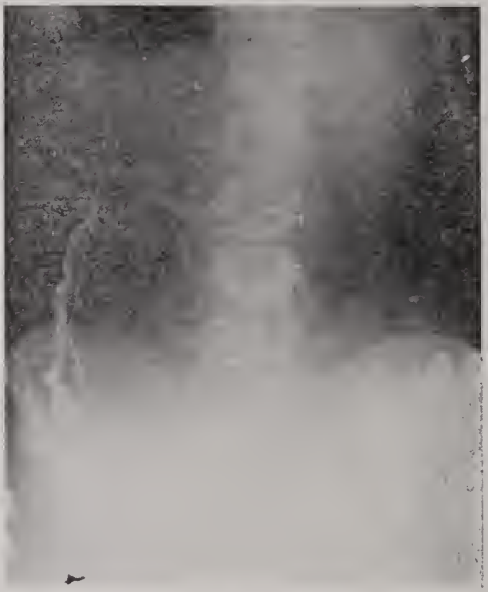


FIG. 2. Mucous Colitis.

Stool, fermentation 4 plus. Soft, mucous 2 plus, otherwise negative.

Diagnosis: Mucous Colitis.

Treatment: Sedatives, rest, forced feeding, hot packs. Treat neurosis. Later, abdominal exercises.

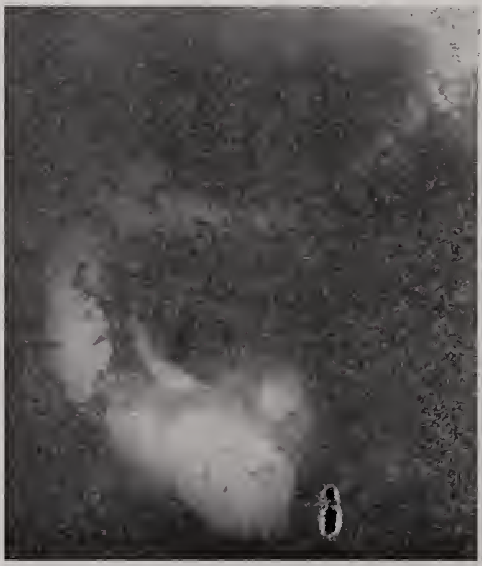


FIG. 3. Spastic Colon.

Comment: This type of case is often diagnosed an appendix or gallbladder on account of tenderness found, and the attacks of pain. The appendix may be of a chronic type and its removal offers relief for a time, but usually from the rest and diet, and not the operation. A careful history and stool examination might have avoided at least the last two operations.

Miss ———, age 28, single. Complaint: Stomach trouble and insomnia.

Family history: Negative.

Past history: Usual children's diseases, but negative for serious ailments. Had appendectomy two years ago.

Periods: Scant, usually regular, except skips occasional periods, duration 2 days. No hemorrhage; no discharge.

Present illness: Complained of stomach trouble since the age of fourteen; has been constipated since childhood and has had very little relief. Wakes up at night with an indefinite dull ache over abdomen which is not relieved by soda, but is relieved with an enema. If bowels moving well usually feels better. Pain no relation to time of food taken; no relation to character of food and food not a factor in causing pain. At times long strips of mucous passed, thought at one time to be a worm. Passes small, round, hard stool with some flatus. Usually worse when nervous. Pain mostly around lower right quadrant, and was told she had appendicitis at different times. No vomiting or nausea. Has pyrosis at times and occasionally bloats after eating. Has intervals of well being. No colic nor jaundice. No diarrhea.

Respiratory symptoms, negative.

Genito-urinary symptoms, negative.

Has frontal headache usually present when constipated. No relation to periods. No relation to diet. No relation to reading. Sleeps poorly when nervous. Worries easily. Other symptoms negative.

Examination: Slender girl of 28. Head, eyes and neck negative. Teeth negative. Tonsils out.

Chest: Long, alar type. Narrow epigastric angle. Visceroptotic type.

Abdomen: Palpable right kidney, not tender. Scar right rectus incision appendectomy and exploration of gallbladder. Appendix reported chronic type, gallbladder negative. Only short period of relief from operation.

Extremities, negative.

Laboratory examination. Blood: Secondary anemia. Wassermann negative. Urine, negative.

Stomach analysis; Free HCL 32, total acidity 56.

Stool: Small round balls, with mucous; otherwise negative.

Proctoscopic: Spastic colon, otherwise negative.

Diagnosis: Spastic constipation, Mucous Colitis.

Treatment: Rest, packs, antispasmodics (belladonna); abdominal exercise, oil enemas. Anti-constipation regime. Treat neurosis.

Comment: This type of case is often diagnosed an appendix or gallbladder, and they are operated with no relief. The diagnosis is easily made from history and stool examination.

Mr. ———, age 36, married; 2 children, good health. Complaints: Diarrhea and abdominal pain.

Family history: Negative.

Past history: Had several attacks of diarrhea several years ago, otherwise negative.

Present illness: The present illness has been of several years' duration, but worse since an attack of grippe several months ago. Always has loose stools, but worse in spells. Large amount of flatus and some tenesmus. Coarse foods increase distress and followed by loose stools. Pain dull and at times colicky. No vomiting; no definite relation to time of meal; no jaundice. Pain not referred. Some bloating.

Respiratory symptoms, negative.

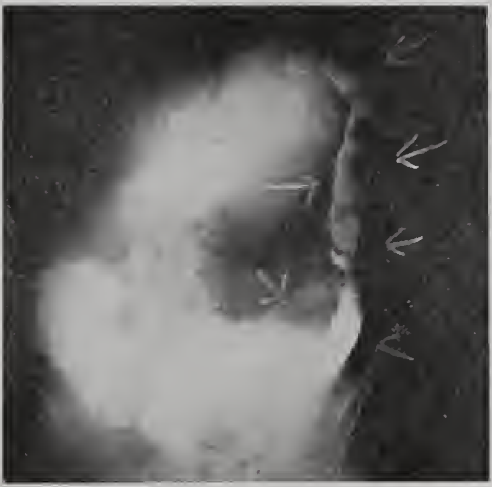


FIG. 4. Ulcerative Colitis.

Genito-urinary symptoms, negative.

Nervous symptoms, negative.

Examination: Head, eyes, neck and chest, negative. Abdomen: Some distention; tender over colon. Extremities, etc., negative.

Laboratory examination: Blood, secondary anemia 2 plus, Wassermann, negative.

Urine, negative.

Stomach analysis, normal.

Stool: Soft stool, small amount, occult blood 1 plus. Mucous 2 plus.

Microscopical: Meat fibres; starch cells, vegetable cells, etc. Blood cells 2 plus. Pus cells, 2 plus. No ameba, flagellates, etc. Proctoscopic: Much spasm and too difficult to examine.

Diagnosis: Ulcerative Colitis.

Treatment: Acriflavine irrigations; bland, high-protein diet; rest, hot packs, etc.

Comment: The diagnosis was easy in this case; however, this condition may be overlooked easily in early cases, and only careful routine will establish a correct diagnosis. The x-ray often gives us our first suspicion of the pathology present. Amebic dyssentery is much more common in the tropics than here, but if careful stool analyses are made, ameba will be found more frequently than is commonly supposed.

Mr. ———, age 56, single. History that of chronic constipation, but not of severe grade. The patient feels well and has little or no discomfort. All examinations were negative. The condition was found in course of routine x-ray examination.

Laboratory reports, negative.

Stool examination, negative.

Diagnosis: Diverticulitis. (Prior to x-ray, a diagnosis of chronic constipation was made).

Comment: This patient had no symptoms of a diverticulitis, and is apparently well. Other cases have left-sided pain known as left-sided appendicitis. These diverticula may cause severe pain and occasionally produce a cystitis, or may perforate into the bladder. They are hard to differentiate from some cases of malignancy, and at times an exploration is the only means of differentiating them. I recently had a woman, aged 56, with attacks of pain in the left side. A mass was felt which had all the ear marks of a malignancy. The history was of short duration and her constipation was of very short duration. The proctoscopic examination showed no ulceration, but a large amount of edema at the site of the tumor mass. A diagnosis of malignancy was made, and at operation a hard, indurated mass in the wall of the bowel, was found. The surgeon pronounced it malignant and removed it. Section of the same proved it to be a diverticulitis, with a large inflammatory mass around it.

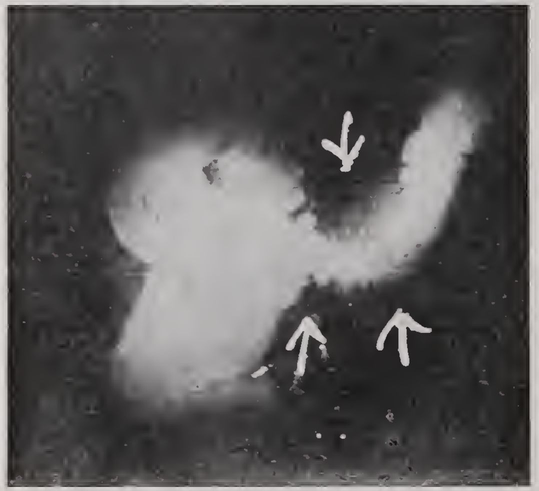


FIG. 5. Diverticulitis of the Sigmoid.

Mrs. C. Age 60. Complaint: Diarrhea and anemia. This patient was examined by several men and treated as a pernicious anemia for one and one-half years. She had no weight loss and had the characteristic appearance of a pernicious anemia.

Examined by us on April 14th, 1920. Small mass palpated in right lower quadrant, not movable, slightly tender.

Laboratory findings: Blood count, anemia, secondary type. Index, Minus 1; no nucleated reds, no leukopenia, etc.

Stomach analysis: Free HCL 0, total acidity 10.

Stool analysis; Occult blood, 1 plus. Wassermann, negative.

X-ray; chest negative, esophagus negative, stomach negative, duodenum negative, small intestine negative; 24 hours, irregular filling defect in base of cecum, tumor mass. 48 hours, filling defect still apparent.

Diagnosis: Carcinoma of cecum. Confirmed at operation.

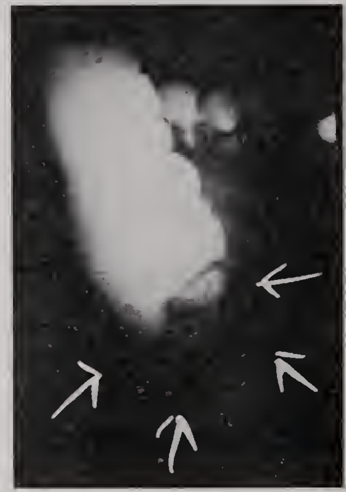


FIG. 6. Carcinoma Cecum.

Comment: Carcinomas may be slow in development so that early diagnosis oftentimes is impossible because no physical signs or symptoms are present that may lead one to suspicion it.

Mr. S. Age 55. Complaint: Stomach trouble. Patient gives characteristic history of a colitis with bloating, flatus, fermentative stool, etc. No weight loss, weakness or asthenia.

Examination: A fat abdomen, negative except for tenderness over colon, especially in the right lower quadrant.

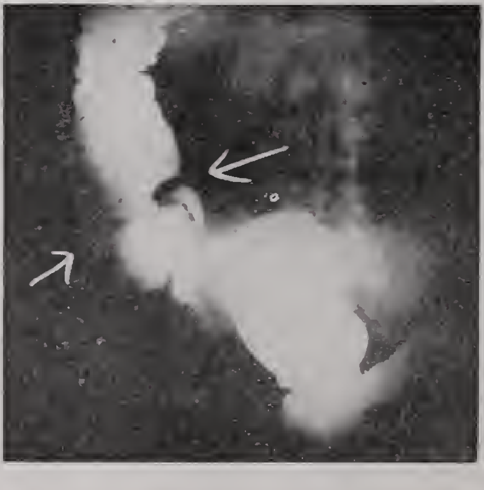


FIG. 7. Adhesive Band Around Colon.

Laboratory findings: Blood count negative. Urinalysis, negative. Stool analysis: Large amount of fermentation. Characteristic microscopical findings. Occult blood negative. Stomach analysis: Free HCL 20, total acidity 40.

X-ray, negative, except colon. Constriction about cecum, which fills poorly; Appendix fills poorly.

Diagnosis: Chronic appendix, colitis, suspicious malignancy. On account of age, advised immediate operation.

Operation: Chronic appendix, with adhesive band around cecum.

Mr. G. Age 54. Oct. 11th, 1922. Complaints: Distress in abdomen, especially left flank. Weakness and backache.

Family history, negative. Past history, negative.

Present illness: Early in June, had an attack of appendicitis, followed by rapid recovery. Later in June, attack of pain in right upper quadrant, resembling gallbladder colic, followed by rapid recovery. Since then indefinite distress over abdomen, especially in the left flank, for which he consulted us. The distress bore no relation to time or eating, or character of food; no vomiting; belching; moderate amount of bloating and flatus. Mildly constipated. Did not notice any especial change in character of stool. Relief of distress by catharsis or passage of flatus. No definite weight loss. Patient nervous and inclined to worry.

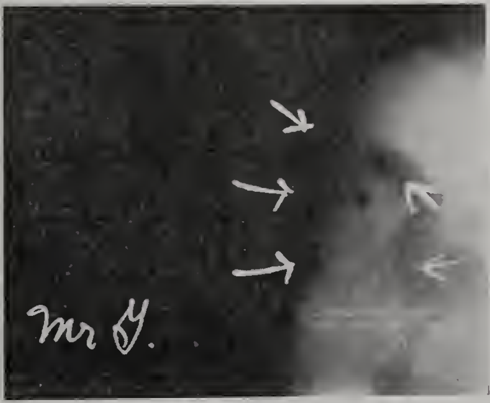


FIG. 8. Carcinoma of Cecum and Ascending Colon.

Examination: Head, neck and chest negative. Abdomen tender over entire colon, no masses demonstrable. Rectal examination; Digital negative; rectoscopic examination negative. X-ray examination: Chest negative, esophagus, negative, stomach fills well, empty in five hours, negative. Pylorus and duodenum negative; small bowel, negative. 24 hours, colon well filled and negative. No pathology found.

Laboratory findings: Urine negative; stool, cathartic stool, liquid, mucous 2 plus; fermentation 1 plus, negative for ova, etc. Occult blood negative.

Stomach analysis: Free HCL 26; total acidity 48. Blood count; Hemoglobin (Dare) 78 per cent; red cells 4,540,000; white cells 4,400; differential normal. Wassermann negative.

Diagnosis: Chronic Catarrhal Colitis.

Patient returned home, and under diet, etc., gained fifteen pounds in weight and felt well for about seven weeks, when he had an attack of influenza. He then started to complain of pain in his lower quardrant, which was more or less continuous. He returned for examination Jan. 10th, 1923, with pain in his right lower quardrant, weight loss and weakness. Examination now reveals a mass in the right renal region, freely movable and only slightly tender. Marked anemia present and patient looks badly.

Laboratory findings: Hemoglobin (Dare) 46 per cent; reds 2,860,000; white cells 4,200; differential normal. No nucleated red cells; poikilocytosis one plus, otherwise negative. Stool examination; Occult blood 3 plus.

X-ray examination: Kidney, ureter and bladder area negative. Colon enema shows large irregular filling defect in ascending colon. Looks like new growth; obstruction not complete.

Diagnosis: Carcinoma of cecum and ascending colon.

This was confirmed at operation.

This patient undoubtedly must have had a carcinoma when first examined, but after careful examination nothing was found. He was a very marked neurotic, and very fretful, so a routine barium enema was omitted. I feel that had we not omitted this routine procedure, we might have not overlooked the malignancy and yet with so few physical and laboratory findings, one would rarely suspect malignancy. This is one of the types with masked symptoms, which at times makes the diagnosis of carcinoma of the colon so difficult.

The above reported cases show the difficulties often encountered in making colon diagnoses. Time and space prevent more detailed description and likewise other interesting cases.

DISCUSSION

SUSAN R. COOPER, M. D., Aurora: I should like to ask how long he uses the reaction, and the results he has after reducing the colostomy — if he really has cures?

F. B. YOUNG, M. D., Gering: I want to add that the use of a two-inch slide without a cover glass, but ringed with a paraffin pencil, and the use of low power simplifies the technique of finding parasites and their ova.

H. J. LEHNHOFF, M. D., Lincoln: I am grateful for this demonstration. I can add nothing to it. I think one lesson this paper brings out is the fact we should not always look for severe lesions — lesions we commonly look for, such as new growths or tuberculosis in the bowel — in these cases of bowel disorders and diarrhea that come to us. I think in the old days we were not inclined to give enough attention to conditions of the bowel other than those that showed up so historically like new growths and tuberculosis of the bowel. At the time these cases came to us with their diarrheas, as a rule — although Dr. Sachs is one of the exceptions to the rule — we were not apt to give them serious consideration.

Late carcinoma in different parts of the large bowel is not so hard to diagnose. If these patients come to us early, it is hard to diagnose; but most of them do not come to us for diarrheas, but because they are losing strength or weight.

This much larger group of cases which have certain degrees and types of colitis from a number of different causes, are hard to diagnose. I remember one of the early teachers said a number of years ago that there were two classes of bowel cases which came to our attention: One, perhaps, not a bowel condition, but an abdominal condition, which was a tumor of the abdomen, which we either diagnosed right away, or failed to diagnose entirely. That is true of cases of chronic diarrhea. We fail to diagnose them entirely if we do not make a clear-cut diagnosis. Only by such procedures as Dr. Sachs has pointed out are we able to diagnose those cases. They are not easy to diagnose — to get right down to the cause of chronic diarrheas. The big thing is he has pointed out a means of overcoming the difficulties of so-called chronic diarrheas.

DR. SACHS, (closing): In ulcerative colitis we keep up the irrigations indefinitely, the length of time depends upon the way the individual case responds. It may be necessary to keep them up over a long period of time. Ulcerative colitis very frequently recurs and cures are very rare.

BLINDNESS WHICH COULD HAVE BEEN PREVENTED*

Jas. M. Patton, M. D., F. A. C. S., Omaha, Nebraska.

Every year unfortunately we see a considerable number of cases of hopeless blindness involving one or both eyes. Of these approximately 30% are the result of conditions which we would ordinarily say were unavoidable. For example, C. G. was brought to the hospital in an unconscious condition, evidently from a low grade meningitis. After two weeks when he regained consciousness, he had no light perception in either eye with no hope of improvement. G. M. lost both eyes as the immediate result of a premature explosion of dynamite. H. R. was brought to the University Medical College Clinic with a yellowish reflex from her left pupil. The eye was blind and hard. Diagnosis intraocular glioma. These are mentioned by way of contrast to particularly emphasize the preventable types of cases.

EXPOSURE KERATITIS

The importance of presenting this subject was suggested to me by the following cases:

K., a female infant of six months, was very sick with intestinal infection, not expected to live and lay in a comatose condition for about 36 hours with the eyes only partly closed. General treatment was continued, but no attention given to the eyes which had previously been normal. At the end of 36 hours instead of dying as had been expected, she began to improve, and then it was noticed that there was a discharge from both eyes. We saw her in consultation and found both cornea hazy, with a perforating ulcer involving the lower third of each cornea. In the right eye, the vitreous was already infected, and the eye was lost from panophthalmitis; the ulceration of the left cornea healed, but with considerable scarring, greatly reducing the possibility for useful vision. If the eyes had been kept closed, it is entirely unlikely that any corneal disturbance would have developed.

September 17, 1924, I was asked by Dr. Flory of Pawnee City, to see J. S., a boy aged 6 years, who was convalescing from a very severe attack of scarlet fever. He had been given up by the attending physician as hopeless. Dr. Flory was then called, and while he was inclined to the same prognosis, was able to save the boy's life. As with the child mentioned above, the boy had been practically moribund for many hours; the eyes only partly closed. On examination Dr. Flory found both cornea hazy, the lower two-fifths necrotic. Prompt measures were taken to protect the remaining portions of the cornea, but when I saw the patient, although Dr. Flory was doing everything possible, it was evident that there was practically no chance of saving useful vision. Later at Dr. Flory's request, the child was brought to Omaha for observation and treatment. There were times when the process seemed to be arrested, but eventually the sight of both eyes was completely lost.

These cases are presented, not as a criticism. The physicians in both instances were excellent men, but the general condition of the patients was so grave that the possibility of ocular involvement was not considered, and the patients were so nearly lifeless that there were no subjective symptoms. Let me urge you most earnestly to be on the lookout in all cases of stupor, no matter what the cause, for any evidence of corneal exposure or incomplete closure of the lids, and if present, institute prompt protective measures. Thoroughly anoint the lids and fissures with an abundance of sterile vaseline, cover this with wax paper, cotton and bandage, or a moist boracic dressing may be applied over the vaseline. In either case, be sure that the lids are completely closed before the dressing is applied. If the condition is very temporary, the lids may be safely held together with a strip of adhesive, though in protracted cases it may be best to fasten the edges of the lids together with sutures. The cornea dries very quickly, and in the presence of a generally lowered resistance, may be permanently injured within a few hours. These cases are dwelt upon, not on account of their frequency, but because they should never be allowed to occur.

Exposure keratitis should not be confused with the so-called kerato-malacia or exhaustion keratitis, which is supposed to be secondary to insufficient or incorrect diets, especially those lacking in vitamine A. The frequency of these cases is generally increased in famine areas; during religious fasts and in regions where food of only low nutritious value can be secured, as in certain portions of Europe during and immediately following the world war. In keratomalacia, the process is usually slower and may involve any part of the cornea, while in the exposure type, the lower sector is first involved. Of course, the lowered resistance of a patient is a predisposing cause, but I am strongly of the opinion that in neither of the cases above mentioned, would the cornea have suffered if they had been properly protected.

---

*Read before the annual meeting of the Nebraska State Medical Association, Lincoln, May 12-14, 1925.

VALUE OF PROTECTIVE GLASSES

Next in the scale of avoidability and of much greater frequency are those cases, in which the only useful eye of an individual is lost from an injury which would have been prevented if the patient had been wearing protective spectacles.

Mr. M., aged 65, lost his right eye several years ago as the result of an accident. The vision of his left eye was not normal, but he was able to carry on his work on the farm very satisfactorily. Glasses had been prescribed, and the importance of constantly wearing them explained. He did wear them part of the time, but one day while chopping wood, a small piece which would have caused no injury if he had been wearing glasses, struck his only eye, and by the time he reached Omaha the eye was beyond help.

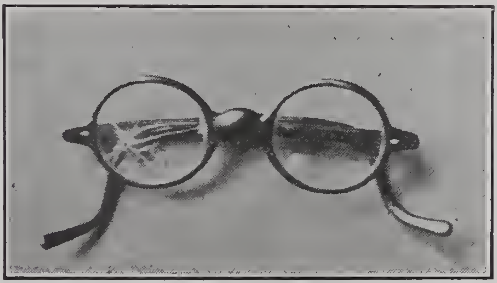
Mr. A. P., a laborer, who had lost his right eye some years previously, was unloading coal from a car, when a small fragment of coal struck his left eye. The wound became infected and the vision mostly lost from a subsequent ulcer. A glass would have prevented this.

All patients who are engaged in occupations, exposed to flying particles of wood, metal, chemicals, etc., should be urged to wear glasses or goggles for protection, even though the vision is normal. The extensive use of storage batteries, causes an increased number of chemical eye-burns from battery explosions. Students and instructors in high school and in college chemical laboratories should be urged to wear protective goggles while at work.

Reports from 58 college and university laboratories indicate 126 injured in the last five years with 17 eyes completely lost.

E. C. R., instructor in a high school laboratory was testing a piece of apparatus for demonstrating a certain chemical phenomenon, when it exploded, completely destroying the vision of the left eye and reducing the vision of the right eye to 4/200, with the possibility of total blindness. Protective glasses or goggles would have in all probability prevented ocular injury.

Figure 1 tells the other side of the story. A young man of 18 was watching a mechanic repair a car, when a piece of steel struck his right eye. The foreign body was removed with the magnet, though with much reduction of vision. Much against his will, he finally consented to wear protective glasses. Within a few weeks he returned with the lens over his good eye shattered as you see, from being struck by a piece of steel, which would in all probability have destroyed his eye, but for the glasses.



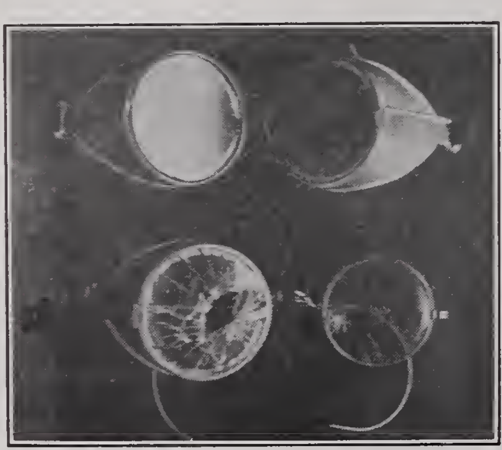
1. Vision of the left eye poor due to an injury from flying steel. Lens over the right (normal eye), shattered by a piece of flying steel a few weeks after the injury to the left. Not wearing glasses at time of first injury.

Glenn C., aged 22, was playing handball, when the ball struck his right lens, shattering it. There was two very slight erosions of the cornea, but no glass was found in the conjunctival space. The vision of the left eye had been less than 20/200 since childhood, due to a congenital defect of the macula, but for the glasses, he would probably have sustained a permanent injury to his only useful eye.

J. F., aged 58, lost his left eye in 1920. Protective glasses were prescribed and he had only been home a few days, when a nail, which he was pounding, flew up and struck the glass of his good eye and actually perforated it, but without injuring his eye in any way.

Incidents of this sort, both of loss from not wearing glasses and protection due to their being worn, could be multiplied almost indefinitely as there is scarcely a day but what we see one or more cases, not always severe, but practically all of which would have been prevented by a protective glass.

To prove the above statement even more conclusively, I had a number of animal eyes placed in a skull, and exposed them to some of the injuries which we meet with in our ordinary every day life. As we see several eyes lost each year from being shot with BB air rifles, I first had the eyes shot at without protective glasses, and in each instance the cornea was either very deeply excoriated or perforated. Lenses of various types were then placed before the eyes, and except in one instance, although the glass was shattered and spread over the cornea, there was never anything more than a very superficial injury. In the exception just mentioned, the lens was shattered but not perforated. The lens was removed and the next shot fired directly at the cornea from the same distance, resulted in a clean perforation, indicating beyond question that the glass had prevented a perforation in the first instances. Pieces of metal, nails, bolt-heads, screws, etc., were then thrown against the lens with as much force as possible, with a slingshot, with the same results. That is the lenses were shattered, but with nothing but superficial injuries to the cornea. When the lens was not present, the cornea was deeply scratched. Ordinary flash-crackers, which are responsible for a good many of our Fourth of July injuries, were exploded at from three to eighteen inches from the unprotected cornea. In each instance the cornea was excoriated. The explosive was then placed in heavy test-tubes intending to approximate the results of exploding chemical glassware. In no instance was the eyeball perforated, but there was marked superficial injury. Glasses and goggles of various types were then placed on the eyes. In one instance the goggle lens, a very inexpensive type, was shattered, covering the eye-ball with small particles of glass, but without perforation. In the next explosion I used a laminated lens, consisting of two plates of glass with a thin layer of transparent celluloid between. This was cracked, but no particles of glass thrown off. If further experiments are as satisfactory, this should be an ideal form of lens to prescribe for children and for all adults with but one eye, who are exposed to flying particles of metal, wood, etc.



2. a. So-called Clip-Cup goggles to clamp over ordinary spectacles.
b. Right Clip-Cup in position. Shot at with high powered air-rifle. Goggle lens shattered but spectacle lens not injured. Gives double protection to eye.
Left lens made of non-splintering glass. Surface of lens hit by shot from high powered air-rifle. Glass cracked but no fragments thrown off. This glass offers special protection to one-eyed people and those employed in hazardous occupations.

Of the goggles, I think the so-called "Clip Cup" is the most practical, especially for all cases where a distance correction is necessary. This type is "clipped" to the regular spectacles, giving the wearer the benefit of his correction, and affording double protection. Should the goggle glass be broken by the impact of a foreign body, the spectacle lens would protect the eye from particles of glass and in most instances effectually prevent further progress of the foreign body. To reassure myself I had a pair of spectacles fitted with a set of these goggles and placed at a distance of 20 feet and shot with a 22 rifle. The goggle lens was shattered, but the inner lens not even scratched. If this form of protection will withstand the impact of a 22 rifle bullet it will certainly be a protection against the ordinary industrial accidents. One large corporation is fitting all their men with this type of goggles.

CATARACTS WITH UNDETECTED GLAUCOMA

While trauma is responsible for a large group of unnecessary blindness, there are other conditions, which, though innocent enough in themselves, may be masking a progressive decrease of vision, which by the time it is discovered, may be beyond help I refer particularly to cataract in its various forms. The diagnosis of cataract is usually based on the presence of a grayish pupil with more or less reduction of vision. However, a gray pupillary reflex may be due to corneal oedema of a beginning acute glaucoma; or it may be from inflammatory exudate, which has filled the pupillary space, with posterior annular synechia, a serious enough condition even if secondary glaucoma does not occur. The tendency for traumatic cataracts to cause acute glaucoma, due to the sudden swelling of the lens, is pretty generally recognized and should be kept constantly in mind in every instance where the lens capsule has been injured. Even where active symptoms of glaucoma are absent, there may be sufficient increase of tension to materially damage the final visual result. This is especially true in the traumatic cataracts of young children, where the original injury may even go unnoticed or the child make so little complaint that the possibility of glaucoma is forgotten. The natural elasticity of the sclera in the very young may contribute to this lack of subjective symptoms. In any event, these little chaps should be very closely watched, and where there is any question at all, a careful test of the tension should be made. Going to the other end of the scale, we sometimes find symptoms of acute high tension associated with spontaneous absorption of cataract. This is usually associated with periods of conjunctival injection and severe pain. The physician and patient may both be pleased at the clearing up of the pupil and a favorable prognosis anticipated, only to find the eye practically sightless on final test. Spontaneous or traumatic dislocation of the crystalline lens into the vitreous chamber is usually followed by glaucoma, and finally loss of vision.

However, it is the change associated with the apparently uncomplicated senile cataract that I wish, especially to emphasize. The usual statement given to the patient with beginning cataracts is something like this, "You have a beginning cataract which can be removed when it is mature or ripe but you will have to wait until the eye is practically blind before this can be done." Too often the patient takes this literally, and when he returns for operation, the eye is hopelessly blind from glaucoma. The vision of all eyes suspected of having beginning cataracts should be carefully recorded with and without correction, and if the vision is less than the opacities of the lens should readily account for, a diligent search should be made for other contributing causes. Glaucoma should be ruled out in every case. Even where there is no question of glaucoma, the patient should report to his physician at least every three months and a careful check made of the vision, fields, tension and condition of the lens opacities. Of course, most cases run a perfectly uneventful course, but every year several patients come in with a diagnosis of cataract, who may have more or less lens opacities, but with the sight practically lost from increased tension.

For example, P. H., from western Montana, had been told by his physician that he had beginning cataracts and would have to wait until the eye was blind before he could have an operation. He waited until he thought he was about blind enough, when he again went to his physician, who evidently recognized the tragedy of the situation, for he advised him to consult an oculist at once. We found the vision of the right eye to be reduced to shadows, in the left he could see the 200 test letter at 8 feet. The tension of both eyes was 37 (Schiotz), not improved by myotics. There was almost no lens opacity. The danger of an operation was explained to him, but he was willing to take the chance, with the result that we were able to permanently reduce the tension to normal in both eyes; and so far the vision in the left eye has not decreased.

It is so easy when the patient complains of decreased vision, to jump at the conclusion that the trouble is due to a beginning cataract, and the mistake discovered only after it is too late to do the patient any particular good.

But even after the cataract is removed, all danger of secondary glaucoma is not over. If after a few weeks or many months your patient complains that his vision is not as good as it was when he first got his cataract glass, do not be contented to attribute the decrease to a secondary opacity of the capsule or changes in the refraction. Happily this is the usual cause and can be easily remedied, but the above symptoms should first and always suggest the possibility of the presence of secondary glaucoma. and a careful test of the tension and fields made at once, and if any question exists in the mind of the examiner, glaucoma should be given the benefit of the doubt. The above is true both of traumatic and post-operative cases. The patient must depend for safety not on the advice of some specialist who is often at a considerable distance, but on the judgment and vigilance of the family physician. Fortunately, cataracts are usually not complicated with glaucoma, but those that are, should be promptly recognized and consecutive blindness prevented.

SYMPATHETIC OPHTHALMIA

Sympathetic ophthalmia is a tragedy no matter how we look at it. Losing a good eye while trying to save its badly damaged mate is deplorable in the extreme. There are cases where circumstances are such that the physician is in no way to blame; in others, we are undoubtedly at fault. Every penetrating wound of the globe, directly involving the ciliary body, should be watched with special care as these cases seem most liable to develop sympathetic ophthalmia. Any case of injury which does not quiet down promptly, where the eye-ball stays red and tender, or where it clears up but becomes congested on slight irritation; e. g., a slight cold, exposure to wind and dust, etc., or if there is a low grade infection of the vitreous which does not clear up promptly, operative interference should be advised. If the injured eye is quite sightless the patient is more likely to follow your suggestion, but even where there is some vision, this should be sacrificed if necessary. In any case, the dangers of the situation should be carefully explained to the patient or to a responsible member of the family. If they refuse to do as you think best, let them understand that the responsibility is theirs. As some people have poor memories, it is a good plan to write out your opinion, giving the patient a copy as a reminder to him, and a protection to yourself. If the patient insists on keeping an eye that you feel is dangerous, he should be urged to consult you on any sort of disturbance of his good eye, no matter how trivial; any slight redness, irritation or disturbance of vision, for as you know, the beginnings of sympathetic ophthalmia are often very insiduous, and considerable damage may be done before the patient realizes that there is much of anything the matter.

This brings up the question of management of penetrating wounds of the globe. Should the eye be removed or eviscerated at or soon after the first examination? Undoubtedly many eyes have been removed that would have healed safely and retained some useful vision. If there is extensive laceration of the anterior segment, with a loss of the lens and considerable vitreous, even if there is fair light perception, an evisceration is usually indicated. On the other hand, even with a large corneal wound, if there has not been much loss of intra-ocular contents, surprisingly good results may be secured by removing any tags of prolapsed iris, cauterizing the wound with trichloracetic acid and covering it with a sliding conjunctival flap. Many an individual today is getting along pretty well with an eye, which on first examination, seemed very unpromising. Even in the hopeless cases, if the patient or parents are very averse to an operation, or if you are somewhat in doubt as to the prognosis, there is no harm in treating the eye for a few days, as sympathetic ophthalmia does not usually appear under 10 days and it is more likely to be several weeks or months.

USE OF SILVER NITRATE SOLUTIONS

Just a word in regard to the use of silver nitrate solution in the eyes. If properly employed, it is a valuable agent, but I have seen two babies blinded by its use. In the first, the parents had been given a weak solution to use in the baby's eyes three times a day. When after several days it was brought to us, both cornea were white and stayed so. The second, was less than a day old when brought to us from out in the state. Both cornea were densely white. The physician stated that 2% silver nitrate had been used as a prophylactic at birth, and this was the labelled strength on the bottle, but from the appearance of the cornea, it must have been at least ten times that strength, concentrated in all probability by evaporation. In presenting this subject to students, I try especially to emphasize three things. (1) Always use freshly prepared Cradee's silver. If possible, use the ampules prepared for this purpose and thus avoid uncertain strengths. (2) Never use silver nitrate about the eye without neutralizing it with salt solution except the "Credee" and then only at the time of birth. (3) Never prescribe silver nitrate to be used in the eyes by the patient. Accidents will not always happen, but it is taking an unwarranted risk.

CHRONIC CONDITIONS

There are a number of chronic conditions which we may properly consider, of which I wish to emphasize two: Namely, simple glaucoma and trachoma. Simple glaucoma is often hard to recognize. There is no pain, the tension increase is often slight, and the field and visual changes are so gradual that they are often not given much thought by the patient, who may come to you for refraction or with the simple complaint that the vision is not quite as good as it was. These patients are entitled to a careful examination, and if the anterior chamber is relatively shallow, if the pupil is dilated or sluggish, or if the visual field is contracted as manifested by the simple finger test, glaucoma should be suspected, even if the central vision is practically normal and you cannot be sure of an increase in tension by palpation. I will admit that the treatment of simple glaucoma is sometimes unsatisfactory. But a certain percentage of cases can be relieved, normal tension restored, and the vision retained, as against the almost absolute certainty of total blindness if nothing is done.

There was a time when trachoma or granulated lids was thought by many to be incurable. This is no longer true providing treatment is carried on in the proper manner and for a sufficient period. It is here that the responsibility of the family physician comes in. Few patients will consult a doctor for daily treatment over a long period of time, nor can a busy man in general practice be bothered with a case of such chronic character. But some member of the family can usually be taught to make the local applications, and the patient and attendant report weekly or monthly in order that the physician may note the progress and be sure that the applications are made correctly and thoroughly. The treatment whether copper, silver or whatever you prefer, must reach all the diseased conjunctiva, retro-tarsal folds, corners and angles, if the disease is to be eradicated. Trachoma is characterized by periods of inactivity which may deceive both the doctor and the patient so that treatment must be kept up for months after all signs of activity have disappeared, and even then the patient should report from time to time for observation. Some patients are not willing to put up with such tedious procedures, but if they do not, blindness, or at least greatly reduced vision is almost inevitable.

IN CONCLUSION

In conclusions, let me emphasize the importance of protecting the cornea of all stuporous or comatose patients, even though apparantly moribund. If the cornea is exposed from paralysis or exophthalmos, the lids should be sutured or united by a plastic operation.

All persons engaged in occupations hazardous to the eyes, and those with but one useful eye no matter what the occupation, should be urged to wear protecting glasses (with lenses made from non-shattering glass).

Cataracts, whether simple, incipient, traumatic, or post-operative, may be and often are associated with glaucoma, which should either be recognized or ruled out in every case and the patient kept under observation.

Remember that sympathetic ophthalmia is a treacherous condition, often coming on with very little warning. Patients wishing to keep an injured eye should have this very thoroughly explained to them. (Better have the explanation in writing).

Never use silver nitrate in the eyes except in the new-born, without following it with salt solution. Never prescribe it to be used by the laity as a collyrium.

If your patient complains of failing vision without anything definite to account for it, suspect simple glaucoma; and urge your patients with granulated lids to have the condition corrected before it causes an ulceration of the cornea with loss of much or all of the vision.

MALIGNANT DEGENERATION OF A PAROTID CELL NEST IN THE EXTERNAL AUDITORY CANAL*

A. F. Tyler, B. Sc., M. D., F. A. C. P., Omaha, Nebraska.
From the Department of Radiology, Creighton University Medical Department.

The following case of cylindroma of the external auditory canal which contained microscopical evidence of parotid tissue is reported because of its rarity and because of its interest from an embryological standpoint. The microscopical findings support the theory that the mucoid material found in cylindromata is really a secretion of the cells making up the parenchyma of the tumor rather than the result of hyaline degeneration as advocated by some. The presence of parotid cells in the tumor bears out the theory that this particular tumor arose at the site of a parotid cell nest in the wall of the external auditory canal.

CASE REPORT

History—Case No. 23334. E. F. C. A white male farmer, age 48, came into the office, October 31, 1924, with the following history. During the year 1920 he noticed that he was unable to hear as well with the right ear as with the left. He consulted an aurist who told him that he had a growth which closed the ear canal. Following this diagnosis Dr. B. B. Bushman had him enter St. Joseph's Hospital where, under ether anesthesia, the growth was removed. He made an uneventful recovery and thought he was well.

During the year 1924, however, he again noticed that the hearing of the right ear was less than the left and returned to Dr. Bushman for re-examination. He was told that the growth had returned and that another surgical removal was necessary. He again entered St. Joseph's Hospital where under ether anesthesia the growth was removed a second time.

Following this operation he suffered intense pain in the ear which disturbed his rest at night and at times made it impossible for him to carry on his work during the day. Frequently the pain was so severe that he walked the floor and must have opiates to get relief.

He was then referred by Dr. Bushman to me for examination to determine whether radiation would be of benefit in the treatment.

Examination. Examination at this time showed that during the six weeks which had elapsed since the second surgical removal the tumor had rapidly returned and that the auditory canal was occluded. The growth arose from the posterior wall of the auditory canal projecting forward (Fig. 1), until pressed firmly against the anterior wall. The growth felt quite firm and there was one point which bled easily when touched with a probe.

---

*Read before the annual meeting Nebraska State Medical Association, Lincoln, May 12-14, 1925.

Treatment. Treatment by radium was advised and accepted following which November 4, 1924, two radium needles were inserted into the auditory canal for a sufficient time to give 50 milligram hours dosage. Following this treatment the patient continued to have pain which was even more severe than formerly. After two weeks the pain became less severe so that opiates were no longer necessary,, sleep being possible by the use of aspirin internally and hot applications externally. On November 18, 1924, 25 milligram hours dosage was given. When he returned December 2, 1924, the tumor was reduced 50 per cent in size. At this time 37.5 milligram hours dosage of radium was given, applied in the same manner as at the first treatment. On December 26, 1924, 50 milligram hours dosage was given.

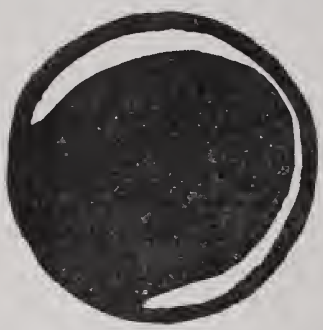


FIG 1. Diagrammatic drawing showing the origin of the tumor on the lower aspect of the posterior wall of the external auditory canal. It projected forward occluding the canal.

January 16, 1925, the ear drum was visible and the tumor had been reduced to 25 per cent of its original size.

February 21, 1925, a fifth treatment was given consisting of 37.5 milligram hours dosage. Following this treatment the growth was no longer visible but the patient continued to have more or less pain which could be controlled by dropping a warm solution of glycerine and phenol in the ear and taking aspirin internally.

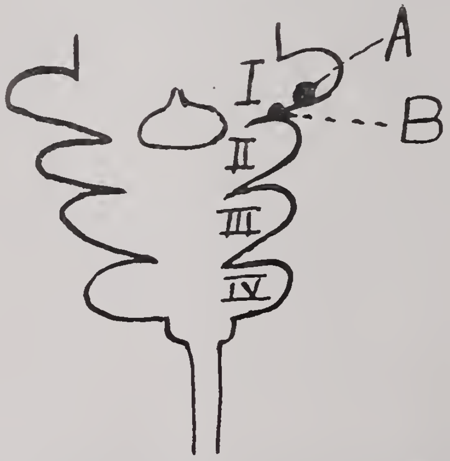


FIG. 2. Diagrammatic drawing showing the embryonal origin of the parotid gland A from a portion of the first branchial arch in close proximity to the origin of the external auditory canal B.

Examination revealed a point on the posterior lower quadrant of the external auditory canal at the original site of the tumor which caused extreme pain when touched. The patient said the pain produced by touching this point was the same kind of pain which annoyed him when at home. Since the patient had already had 200 milligram hours dosage of unfiltered radium in the auditory canal during the past three months and the tumor was no longer visible, I thought it unwise to use further radium at this time.

Pathology—Both specimens removed by Dr. Bushman were examined microscopically, the first one by Dr. Carey and the second one by Dr. Russum. Both microscopical reports were practically identical. "The specimens consisted of an ovoid mass of white, firm, fibrous tissue measuring 5x5x4 millimeters in size from which sections were taken."

"Microscopical examination of the sections showed clearly demarcated alveolar collections of flattened or cuboidal cells arranged in glandular fashion about collections of mucoid material. There is a well developed stroma. The mucoid material is apparently a result of changes in or secretions by the cells and is not apparent in the stroma".

Conclusions: "It appears that this tumor should be classed as a cylindroma but there appears to be parotid tissue present also".

DISCUSSION

Pathology. W. G. MacCallum (1) says: "Cylindromata or tumors in which hyaline cylindrical strands or balls are interspersed with strands of flattened cells were described by Billroth.............................. They are usually tumors which occur in the mouth, near the salivary glands or in the nasal sinuses, but may be found elsewhere. They are generally benign but may metastasize. Histologically the cylindrical hyaline structures are seen to be formed by modification of the connective tissue stroma or of the walls of the blood vessels, although in some cases such hyaline masses appear to be formed in the middle of a strand of tumor cells. The name is given on account of this anatomical peculiarity and should not distinguish a special type of tumor. While it is difficult to decide upon the actual origin of the tumor cells, Ribbert has brought strong evidence that they are epithelial and that they arise from the glands or surface epithelium of the mouth and nasopharynx". (2) "In the salivary glands themselves there occurs not only a form of 'cylindroma', but also and more frequently composite tumors containing several types of tissue".

Embryology. It will be recalled that the external auditory canal is formed in the embryo by an invagination of the ectoderm on the "dorsal part of the first outer branchial groove and the adjacent portions of the first and second arches". (3) It will also be recalled that the parotid gland "originates from the buccal sulcus". (4) of the mandibular process of the first branchial arch. (Fig. 2).

At the same time that the external auditory canal is pushing inward the parotid gland is pushing ventrally in the mesenchyme to take its place in front of and below the auditory canal. It would seem then that occasionally some cells of the parotid gland might be included in the wall of the external auditory canal and carried some distance inward beyond their normal location in the fully developed embryo.

The particular case here reported seems to bear out the explanation offered above. The tumor was found in the wall of the external auditory canal, was covered with epithelium (Fig. 3), and contained parotid cells. (Fig. 4). Cylindroma of the external auditory canal is an infrequent type of tumor. A careful search of the literature reveals but few reports of cylindroma. R. H. Baker (5) reports two cases of cylindroma of the tongue. From the microscopical study of these cases he concludes that cylindroma is a definite type of tumor arising from the endothelium of the blood or lymph vessels. He thinks the mucoid material is the result of pressure necrosis of cells rather than a secretion of the cells. He thinks the mucoid material reported by the microscopists is really hyaline degeneration. This deduction is based on the fact that the mucoid material was found both centrally and peripherally to the secreting cells in the cases reported by him.

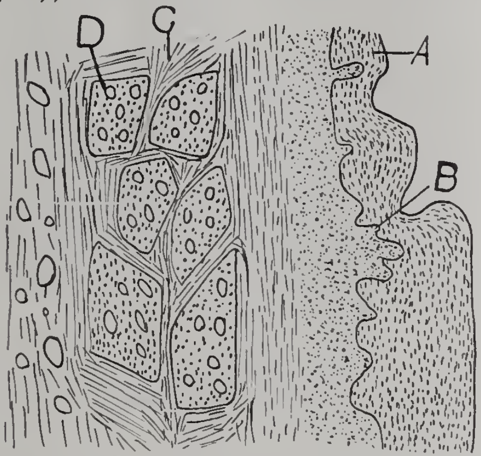


FIG. 3. Drawing from a microscopical section of the tumor removed from the case reported as seen with the low power objective. A—epithelium, B—papillae, C—stroma, D—cuboidal arrangement of parenchyma.

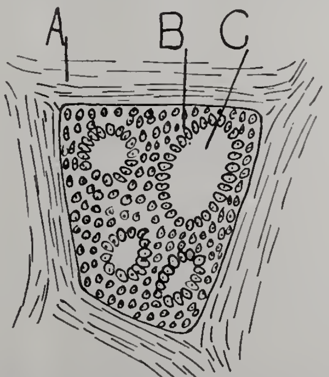


FIG. 4. Drawing of cuboidal area as seen under high power objective. A—stroma, B—cells of parenchyma in glandular arrangement surrounding C—mucoid material.

In the case I am reporting the mucoid material was found only central to the secreting cells which were arranged radially around the mucoid material. (Fig. 4). This arrangement would favor the theory that the mucoid material was actually secreted by the cells.

A search through the Cumulative Index of the American Medical Association and the International Abstract of Surgery during tne past ten years reveals no reports of cylindroma of the external auditory canal and none of those reported as located in other parts of the body have contained parotid tissue.

The external auditory canal seems to be singularly free from new growths. W. Herbert reports a Giant Cell Sarcoma of the Auditory Canal Complicating Mastoiditis (6), while O. Benesi reports a Hypernephroma of the Ear (7). This tumor projected into the auditory canal from the anterior wall. At first observation it was the size of a bean but gradually increased in size and finally invaded the surrounding bone structure and skin and at death had extended into the brain. This tumor was secondary to hypernephroma of the kidney.

It is hoped that the report of this case of cylindroma may stimulate further study of this rare and interesting tumor of the external auditory canal.

I simply wanted to report this because of its rarity and interest from an embryological and a pathological standpoint.

REFERENCES

1. MacCallum, W. G. A Textbook of Pathology 1917 p. 930.
2. MacCallum, W. G. A Textbook of Pathology 1917 p. 940.
3. Bailey, F. R. and Miller, A. M. Textbook of Embryology 1921 p. 560.
4. Bailey, F. R. and Miller, A. M. Textbook of Embryology 1921 p. 297.
5. Baker, R. H., Cylindroma of the Tongue, Surg. Gynec. & Obst. 1916, xxiii 356.
6. Herbert, W. Giant Cell Sarcoma of Auditory Canal Complicating Mastoiditis. Laryngoscope 33: 414-416. June, 1923.
7. Benesi, O. Hypernephroma of the Ear. Monatschr f. Ohrenh 1920 liv 961.

MINIMUM REQUIREMENTS IN THE TREATMENT OF INFANTILE PARALYSIS

H. Winnett Orr, M. D., F. A. C. S., Lincoln, Nebraska

It is one of the notions of both doctors and patients that every patient is different from every other and that no two patients even with the same disease are to be treated exactly alike. In a sense, this is true, but to have such a thought constantly in mind leads us away from the proposition that, after all, in similar conditions there are certain principles with regard to treatment and certain methods that should always apply.

In many years of observation and special care of late cases of infantile paralysis I have been impressed with the fact that we are called upon to treat avoidable deformities which should have been prevented by earlier treatment according to fixed principles and by standard methods — practically the same for all cases.

In most patients with deformities due to infantile paralysis, treatment has been neglected in some particulars and the principles of deformity prevention have not been observed. During the past few weeks I have seen a number of acute cases of infantile paralysis and I have again been forcibly impressed by the fact that none of them were receiving all of what may be called the "minimum requirements" for the treatment of such cases.

To begin at the beginning we may say that all of our objects in the treatment of infantile paralysis may be summed up as follows:

1. Prevent the acute attack.
2. Modify the symptoms or shorten the acute attack if it occurs.
3. Restore the patient to normal health and habits as promptly as possible (about 25% of the patients entirely recover in from 3 weeks to 6 months).
4. Prevent crippling and deformity to as great an extent as possible. (About 65% of the patients are crippled or deformed in some degree. 10% of the cases are fatal).

The minimum requirements in 1, 2 and 3 will at once occur to most pediatricians and general practitioners. Also, one may say, that, in general, the disease being self limited a disregard of treatment up to No. 4 makes less difference in the ultimate outcome than in No. 4.

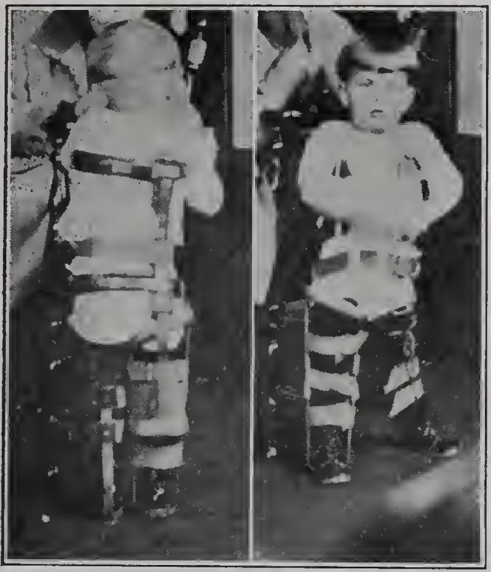
In the cases that belong under No. 4, however, whether or not the patient has the benefit of standard treatment makes a tremendous difference in his entire future. He is severely crippled or not — he is severely handicapped or disabled or not, just as whether or not he receives during the early months following the acute attack what may be called the minimum requirements of treatment.

If the patient with infantile paralysis recovers from the acute attack and is partially paralyzed (65% of the cases) the objects of treatment from that time forward must be:

1. To secure a return of power to the paralyzed muscles or muscle groups.
2. To prevent deformity which may be caused by the pull of unparalyzed muscles.
3. To prevent deformity (static) by weight bearing on unprotected (unsplinted) partially paralyzed legs or other parts of the body.
4. To restore stability (by surgical operation or braces) to unrecovered paralyzed trunks or extremities.
5. To correct contracture or static deformities and stabilize such parts (by braces or operation) in the later stages. (Usually do not operate until about two years after the acute attack).

Immediately following or even during the acute attack of infantile paralysis it can be seen that the affected parts tend to assume abnormal positions. In the lower extremity, for example, it is the usual thing for the foot to drop and for the entire limb to rotate externally. This abnormal position should be corrected as soon as it appears. A foot cock up splint should be put on to keep the foot dorsiflexed and the limb controlled so that the toes point directly forward (ventrally).

As soon as the patient begins to be up various vicious tendencies may begin to appear. If there is drop foot the right angle posterior iron foot splint should be worn. If there is valgus or varus of either the ankle or the knee the so-called double lateral irons with suitable pads should be put on. (A common mistake is to hinge these braces at the knee and ankle — this should usually not be done). If there is marked external rotation of the lower extremity or much weakness of the hip or trunk muscles the splint or brace should take the form indicated in the illustration herewith. Such a body and hip splint is not only good protection against many and severe deformities but enables the badly paralyzed patient to get about at once with crutches with great comfort and assurance.



The common objection to such a splint that the patient cannot sit well is no objection at all. As a matter of fact such a patient should not sit very much. The patients of this sort who sit a great deal without splint or brace protection are the ones who develop the most extensive and the most serious deformities.

Trunk muscle paralysis and spine deformities should be treated early and efficiently with spine braces. Contrary to popular notions — in and out of the profession — such treatment if done properly, gives very good results.

One type of paralysis especially — paralysis of the deltoid muscle — should be treated from the very beginning and very faithfully persevered in. If there is paralysis of the trunk, a body and arm (in abduction) cast or brace should be put on and worn until as much power as possible has returned to the weak muscles.

In all these situations, as soon as acute neuritis and pain have subsided, there will be certain benefit to be obtained by gentle massage, application of heat (diathermy, etc.) electrical stimulation of muscular contraction, educative exercises, etc. It is to be emphasized, however, that correct splinting for protection takes precedence over all other forms of treatment.

The methods — all the methods — described and implied in the above may be said to contribute the least that is required and that every patient is fairly entitled to, who has had, and is suffering from the effects of, infantile paralysis.

SOME PROBLEMS IN RECONSTRUCTIVE SURGERY*

Czar C. Johnson, M. D., F. A. C. S., Lincoln, Nebraska

Mr. Chairman and Gentlemen: There is satisfaction in addressing this gathering, for while we have a small number, we have rare quality this morning to talk to. In my judgment, the benefits derived from these meetings are primarily the impacts that we receive by coming in contact with others, and getting their ideas. The idea you carry in your mind which is never expressed is a potential one, and does little good. The real progress in medicine and the world at large has been made by those men who have had the courage of their convictions. They were the men who broke through the circle of the social order and expanded that ring and made progress.

We sometimes criticize a man for being dissatisfied with conditions as they are. Now, if man had been perfectly satisfied with conditions as they were, we would be using tallow candles instead of electric lights. There can be no progress with perfectly self-satisfied individuals.

This paper I am going to present to you has a good many phases. I believe there is a loadstone in the lives of men that impel them toward a certain environment or work. From the very nature of things, for the last eight or nine years I have been intimately — very intimately — in contact with disabilities. From the beginning of 1917 up until the present time, I have probably seen, examined, or treated in the neighborhood of 25,000 disabled individuals. Certain problems have entered into the question of reconstructive surgery and to discuss the subject without taking up nearly all of these phases is not practical.

I am going to break through the traditions of the Nebraska State Medical Association, like the young man that I am, and talk just a little bit in the first part of this paper on finance. It is almost lese-majeste to speak of finance in a medical society; but I am going to do it this morning.

Statements were frequently made during the last session of the legislature that the cost of surgical service is excessive. The lay press printed the substance of these statements and the medical profession so far as I have been able to ascertain allowed the charge to go unchallenged.

---

*Read before Nebraska State Medical Association meeting, Lincoln, May 12-14, 1925.

We have assumed that general and special surgery requires specialized training and experience as well as a natural aptitude not common to the entire profession. Acting upon this assumption a classification has existed in the profession of surgeons and general practitioners. By reason of the special learning, experience, natural aptitude, and moral character deemed to be requisite, a basis of fees has been established under which measured by the time element the surgeon has been compensated at a rate in excess of the rate obtaining for the general practitioner. Now either this classification has a justification in fact or it has not. That the classification is not maintained in actual practice is evidenced by the fact that 60% of the licensed practitioners in the city of Lincoln engage in the work of general and special surgery, whereas barring the group of nose and throat specialists, 12% only of the licensed practitioners have specialized training, and experience to meet the standards of the theoretical classification. Generally speaking the fees charged by the 60% corresponds to the fees charged by the 12%. If the 60% are in fact qualified then the assumed reason for fees in the surgical field in excess of the general practitioner is without justification; that is to say, assuming the requisite training experience and natural aptitude in the two fields the fees in the two fields ought to be the same and it follows that either the fees in the field of the general practitioner are too low or the fees in the field of surgery are too high. If the classification is theoretical only, we are imposing on the public by charging higher fees in the field of surgery and conversely if the classification is based on fact and not fiction the justification for the higher fees are the qualifications of special training, experience and natural aptitude.

A vast difference exists between the mental and physical attributes of the structural iron worker and the esthetic decorator. Why delude ourselves with the communistic doctrine that all physicians are by nature, education and training equally qualified to diagnose and treat any and all diseases when there are so many permanently disabled individuals, who are economic and social liabilities, as products of this doctrine? This communistic medical teaching is one of the problems which the surgeon, engaged in reconstructive measures, has to deal with and it is also one of the large problems of general scientific medicine.

I appreciate that this statement is a radical departure from the usual commendations indulged in at medical meetings. No greater fallacy was ever uttered than the demagogic camouflage that all men are created equal. The physician who has biological knowledge should be the first to deny it and the last to be influenced by it. If scientifically trained men fail to recognize special qualifications for special work, we cannot blame the layman if he is willing to try at random the non-scientific cults who assert their therapeutic methods to be equal to or superior to scientific medicine.

When the casualties began piling up in the last war, the American Medical Corps must have realized that its quota of specially qualified officers assigned to reconstructive surgery, although distinguished, was limited. It is assumed that because of the lash of necessity, nose and throat specialists, general surgeons, dentists and orthopedic surgeons, many having had little training in the fundamental and less in the special requirements, were added to this quota. They were patriotic men. Their patriotism, however, was not an adequate substitute for specialized knowledge. The demand for efficient reconstructive surgeons at that time was great, and the need in civil life today is urgent.

The mission of reconstructive surgery is the prevention of acquired deformities and disfigurements; the correction of congenital malformations and disfigurements and the restoration of function of soft tissue in any part of the body. Hernia, malformations of the head, gastrointestinal and urogenital tract and extremities constitute the usual congenital cases. Parents are sensitive to these defects and ordinarily require a little urging to secure their cooperation for corrective measure. Each one of this group presents a special surgical problem. The time element is of prime importance. One of the general problems is to secure these cases before valuable and necessary tissues have been sacrificed by ill advised operative and non-operative procedures.

People are slow to observe the transition from one phase of civilization to another. The change in this section of the country from a pioneer agricultural community to a community in which commercial and industrial activities more than equal, in value, the agricultural pursuits, has been so imperceptive that a majority of the people have not fully realized that a transition has been taking place. This transition has produced a complex problem for the medical profession. Today we are striving to live and prosper in a predominately commercial environment and at the same time preserve ancient economic traditions of medicine. We are, with religious courage and fortitude, endeavoring to stem the irresistible tide of medical evolution, to which, our biological knowledge should teach us we must eventually intelligently adapt ourselves. The social evolution in this country in late years has increased physical hazards in civil life to such a degree that the resulting acquired deformities are annually equal in ratio to those produced by the war. Many of these disabilities are the result of compression trauma, compression paralysis, severed tendons, mal-union of fractures, joint injuries, unrecognized brain, cord and nerve injuries, facial disfigurements and contractures of extremities following wounds and burns. Nearly all such disabilities could be prevented or at least minimized by the application of a reasonable amount of skill and the assistance of special knowledge in the more difficult cases. The correction of such conditions presents an individual problem which demands thorough training in the fundamental and special principles of reconstructive surgery. The application of this training requires a wide range of adaptability, creative ingenuity, considerable patience and painstaking attention to details. A certain class of deformities may be restored to practically normal function, others may be improved and some are hopeless. The tissue and area involved is a large factor. The degree of restoration of function, by treatment, as a general rule, is in direct ratio to the length of time the disability has existed. Many cases require the assistance of the dental surgeon, nose and throat specialist, pediatrist, internist, neurologist, rontgenologist or orthopedist. The scientifically moulded mind recognizes limitations and welcomes assistance. All things being equal, it is a reasonable assumption that one who has studied a large number of these conditions is more competent to choose and apply remedial measures than one who has had only limited experience in this special field. The cooperation of the patient, the family physician, clinical and scientific training and the biological character of the patient constitutes the surgical problem.

The economic problem invades every social organization and is important. Each case of permanent deformity, whether rural or urban, is an economic loss and a social and medical liability. No good and sufficient reason exists for failure to accord injured, deformed or disfigured individuals the same relative consideration as is given to those with organic lesions of internal organs. Society has done its part. Adequate provision has been made for the poor and the rich. Schools and colleges at an expense of millions of dollars annually for the education of physicians have been provided. Private and corporate hospitals have been established and paid for by the public. State hospitals have been established and are maintained by the public. U. S. Veterans' Bureau Hospitals under the provisions of the Reed-Johnson Act afford gratuitous hospitalization and hospital treatment for any ex-service man or woman the cost of which is defrayed by society. A soldiers State Aid Fund has been provided by the public. The Workmens' Compensation Law provides compensation and medical and hospital treatment for those injured in industry, the cost of which is paid by the public. Ample provision has been made by a generous public and the medical profession must assist in reducing these social liabilities to the minimum or accept the odium of incompeteuancy.

Our profession has clearly not measured up to the possibilities. The public has just reason for insisting that we shall. Just as industry has reached its present state of efficiency by specialized effort and complete coordination of functions between various units, so also must our profession in order to achieve a relative efficiency coordinate its activities and at every step utilize specialized effort to eliminate error and resulting loss.

We possess no board of directors or department heads to compel this coordination. We must obtain the same results by recognition of our individual limitations or lose our autonomy to compulsory coordination which is another word for state medicine.

I believe that three major reconstructive programs should be inaugurated without delay.

First: The development by precept and medical education and the employment in active practice, of competent internists as diagnosticians, medical therapists and coordinators of the auxiliary special branches of medicine.

Second: A more liberal education in medical economics in our schools and by society meetings.

Third: The substitution of organization for organizations. The amalgamation of the innumerable duplicating, overlapping special and class organizations into a united militant American Medical Association, not forgetting that the prime purpose of organized medicine is to enable physicians to live and work together in harmony.

DISCUSSION

J. N. Plumb, M. D., York: We ought to recognize in every line idealism, and the doctor has no doubt given us the very high ideals from which he labors himself, and tries to induce each one with whom he comes in contact to do that from day to day.

We know that we are drifting toward a national and state medicine. We are being pushed into that line. We are following the German state medicine ideas. So many of our medical ideas come from Germany that we have adopted to a large extent those things. It is going to do away with the individuality of medicine to be dominated by state medicine of any and every kind. I have always been against the idea of having medicine and doctors under contract by firms — by the people who have a large number of men under them. This contract practice is just a form of compulsory medicine. If we get state medicine or have the United States Health Bureau dominated by those things, we will have the very same idea as that which is controlled by some one man under a corporation.

We are all after a living, and when the Doctor speaks about the men in Lincoln — 60 per cent of whom are practicing more or less surgery without preparation, it is largely just a matter of economics with them. They are doing everything to make a living. The same thing takes place with the osteopath and chiropractor. You know there is not a thing in the matter of medicine but what both the osteopaths and chiropractors are doing. They are prescribing; using hypodermics; using obstetric forceps; giving morphine, and even giving anesthetics. They are telling their patients that they are just as well prepared as the regular practitioners, and they cite as evidence the various patients who voluntarily state they have been cured by some member of this particular cult.

These men who do surgery without preparation are forced into it by the economic situation, largely. We must, as the Doctor says, so elevate the educational ideas of the surgeon, of the medical man, of the eye, ear, nose and throat man, that the public will not go to an obstetrician if they want their eyes doctored or their noses looked after, nor to a surgeon if they want their tonsils removed. The surgeon is just as much at fault as anybody else. In our town the general surgeons do all the removing of the tonsils and all the surgery that should go to the specialist, if possible. If they do it, why not have the other men overlap?

In medical societies and places of this kind, as the Doctor has brought out, knowledge must be correlated to the different divisions, and we must be proficient in the line in which we propose to be proficient, and then educate the laity that the man is trained for that purpose and they must go to that man for it.

My idea has been if our medical colleges would teach osteopathy, would teach chiropractic, and have a man to teach all of us these "tom-fool" things, we would soon get away from having special osteopaths and special chiropractors. The homeopathists found out the fallacy of limiting themselves to an alley when they might have the whole street. It is the same with these other things. Education — education — more education is the big thing which every good doctor must seek. The idealism is fine for us. We must follow it, but backed by education and the knowledge that will help us to put it across.

DR. CZAR JOHNSON, (closing): I do not believe my paper was a dissertation on cults. The cults do not bother me, and I do not think they should bother anybody else. I said in my paper if we as scientifically trained and educated men fail to differentiate training for special classes of work, then we cannot blame the public if they fail to make the differentiation between scientific medicine and the cults. That was the statement.

Medicine is not great for what it has been, or for what it is. Medicine is only great for what it may become; and the sooner we get that fundamental in our minds, the better. Personally, I do not believe with all my idealism that perfect truth is attainable, but we can approach it. The nearer we approach it, the nearer perfection we become as a scientific body. I firmly believe, from taking care of thousands of men and women who represent a great cross section of this country, that there are two solutions for our problem, because my work has invaded the province of general medicine and surgery and the rest of the specialties. First, we are going to have to apply the scientific knowledge that has been worked out in the physiological laboratories, and develop better and more generally by internists; and second, that these internists must act as co-ordinators of the special branches of medicine. We cannot continue to allow the nose and throat man, the surgeon, the orthopedist, and the what not to be a little world by himself. We must have some co-ordinating factors. If we are willing to do it ourselves, we will maintain our individuality. If we fail to do it ourselves, there is a time coming in the not far distant future when it will be done for us.

I believe we are over-organized, and only when we eliminate the duplicating organizations and get down to organized medicine based upon justice, and for the purpose of enabling the doctors to live together in harmony, will medicine come back into its own and move forward.

Judge—"Guilty or not guilty?"

Rastus—"Not guilty, suh".

Judge—"Ever in jail before?"

Rastus—"No suh. I never stole anything before."

ACUTE RETROBULBAR OPTIC NEURITIS OF PARANASAL SINUS ORIGIN

W. A. Cassidy, M. D., Omaha.

The following case is reported to illustrate the importance, and good results, of early surgical intervention in cases of retrobulbar optic neuritis due to infection of the paranasal sinuses.

Miss A. H. Age 19, was first examined on August 18, 1924, at our office by Dr. Harold Gifford.

History: On August 3, 1924, the patient first noticed a burning sensation and pain in her right eye, particularly when turning it about. A week later the vision of the right eye began to fail and became progressively worse until she reported at our office for examination.

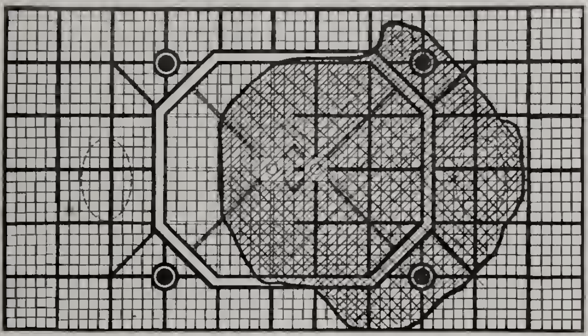


Fig. I. Absolute Scotoma. Right eye.

Examination: The vision was, with best correction, O. D. 2/200, O. S. 20/20. Pupillary reaction normal. Ophthalmoscopic examination revealed no visible pathology. Examination for scotoma and blind spots showed a large absolute central scotoma which included the blind spot. The Lloyd stereocampimeter gave a picture as shown in Figure I. Urinalysis and general physical examination were negative. There was no evidence or history that might suggest lues. A diagnosis of acute right retrobulbar optic neuritis was made. The patient was referred to me for an examination of the nose and throat.

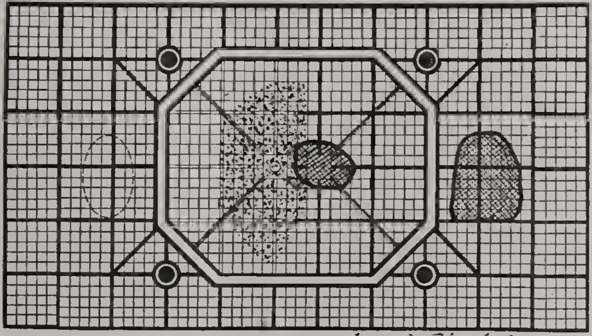


Fig. II. Enlarged Blind Spot. Absolute Central Scotoma Relative Scotoma to nasal side of macular region.

Rhinological examination: This showed a swollen right middle turbinate, blocking the middle meatus of that side of the nose. The other turbinates were tumefied and covered with a thin grey secretion. The tonsils had been completely removed. The teeth were in apparent good condition. A diagnosis of right ethmoiditis and sphenoiditis was made and I advised removal of the right middle turbinate, right ethmoidectomy and sphenoidotomy.

On August 20, I performed the operation as recommended, under local anesthesia. A small amount of sticky secretion was found in all cells. No general reaction following the operation. The next day the patient was certain her vision was improved and on the second day, post operative (August 23), she was returned to the office for examination with the Lloyd campimeter. The picture as shown in Figure II demonstrated the amount of improvement. The vision by Snellen chart was O. D. 20/70, O. S. 20/20.

Gradual progress was noted daily and on August 27, the right eye had attained a vision of 20/30, with a blind spot of normal size and only a faint relative scotoma present as shown in Figure III. The patient was then dismissed with instructions to use mercuric inunctions five days out of the week for two months and to take two thirty grain doses daily of sodium salicylate internally for two weeks. This medication was given to combat the inflammation of the optic nerve, and not as an anti-luetic remedy.

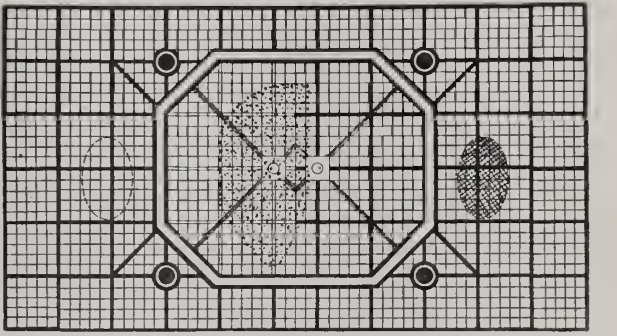


Fig. III. Normal blind spot. Faint relative scotoma to nasal side of macular region.

Up to the present, June, 1925, no relapse has been reported.

The prognosis in such cases depends upon early recognition and the institution of proper treatment. In a comprehensive article by White (Laryngoscope, May, 1922) in which thirty-four cases were tabulated, the author states that "unless a case shows improvement under treatment within a week, there is danger of permanent impairment of vision unless pressure on the nerve can be relieved. In cases of more than two months standing little can be expected, except possibly that the progress of the disease may be checked if due to some sinus infection."

In the case just reported, with a duration of two weeks, conservative treatment was not considered advisable and the results obtained seem to justify the measures which were employed.

—600 Brandeis Theatre Bldg.

THE MANAGEMENT OF HYPERTENSION

George P. Pratt, M. D., F. A. C. P., Omaha, Nebr.

Medical investigators, especially the physiologists, pharmacologists and biochemists, in the last few years have contributed a vast amount of knowledge to our understanding of hypertension. Clinically, we now recognize a whole group of symptomatic hypertensions, such as renal, arteriosclerotic and cerebral; and also an essential type of hypertension (hyperpiesis) which we cannot now associate as symptomatic. It is a fertile field, and if we are to learn the causes and have more than a symptomatic or imperical treatment, these investigations will have to continue. However, so much material has been accumulated that it is hard to evaluate the findings and, perhaps, through such an abundance of literature, we have been led astray from a practical consideration of the treatment of the patient with high blood pressure. Not long ago I heard a very learned physician read a paper on hypertension and, after using up his allotted time of almost an hour, he was still considering the various theories of the etiology. All these facts and theories of etiology and pathogenesis will be purposely omitted and we will proceed to a consideration of the practical every day treatment. The outcome of this treatment, of course, depends on the duration of the hypertension, and the cases which are seen earlier will respond better than those which are seen later.

The lives of people with higher blood pressure than normal are terminated usually by one of four methods; cardiac failure, uraemia, apoplexy or intercurrent infections; some by one route and some by another, depending on the amount of involvement of the heart or kidneys or blood vessels, as the case may be. In the early cases it is often rather hard to predict which organ is to give up first. It varies with different modes of life and habits; much of which may be modified. A treatment directed toward preventing these complications is certainly rational, and will prolong the life of the patient.

The heart may be protected by modification of exercise and mental attitude. The latter condition is very important. It is always better to keep patients uninformed as to the exact height of the pressure and, above all, their attention should not be directed toward the heart. It is better to speak to them in broad terms, telling them their pressure range is somewhat above normal, that it will vary from day to day, assuring them it is "not bad", and if they will slow up a bit and diet, they can enjoy many years of excellent health. Having attained this mental attitude of desiring to do what is necessary, confident in the result, indifferent as to the findings, you have done much to add to the longevity of your patient. The nervous manifestations of patients with high blood pressure are often very pronounced. I have had many cases come to my office with the chief symptom "nerves". Exercise should be considered carefully in each case and kept within the limits of safety. Many patients suffering from early decompensation with hypertension, before they consult their physicians will decide they are not getting enough exercise and suddenly take up golf, horse-back riding or hiking, thereby doing themselves an irreparable damage. Sudden severe efforts should be tabooed and rest periods established between intervals of exercise. For a man in business, a noon day nap will be found very beneficial and well worth the effort. For a woman at home, reclining for a short rest after meals will be found helpful. This much is certain, the exercise must be cut to a minimum, and if there are any signs of decompensation, a prolonged rest in bed should be advised. In the later stages, digitalis in small doses will strengthen the heart. Ambulant patients may take digitalis to good advantage. I am certain I have postponed a heart failure in cases of hypertension by its moderate use.

One may protect the kidney by reducing the salt and protein in the diet. The use of salt is a habit; and by first eliminating its use at the table and later by cooperating with the family, its use in cooking may be reduced to a trace. The reduction of protein is not so easy, but very important, since the guanidine group of metabolites have recently been shown to have a decided pressor action. In severe cases it should be weighed and measured in calories. However, for ordinary purposes, one can accomplish the best results by the use of the O'Hare diet charts, as follows:

GROUP I

(Each full portion counts 1.)

Breads	Full Portion	Vegetables	Full Portion
Bread (white)	1 average slice	Baked beans	1 tablespoonful
Bread (graham)	1 average slice	Lima beans	1½ tablespoonfuls
Uneeda biscuit	5 crackers	Potato, creamed	1 tablespoonful
Shredded wheat	1 biscuit	Potato, mashed	1½ tablespoonfuls
		Potato, boiled	1½ tablespoonfuls

GROUP I (continued)
(Each full portion counts I.)

Cereals	Full Portion	Vegetables	Full Portion
		Green peas	2 tablespoonfuls
Oatmeal	2 tablespoonfuls	Canned corn	2½ tablespoonfuls
Boiled rice	3 tablespoonfuls	Onion, boiled	3 tablespoonfuls
Cornmeal mush	4 tablespoonfuls	Macaroni	4½ tablespoonfuls
Cream of Wheat	5 tablespoonfuls	Squash, boiled	5 tablespoonfuls

GROUP II
(Each full portion counts 2.)

Dairy Products	Full Portion	Meats	Full Portion
Milk	1 glass	Chicken, roast	3"x3"xI-8"
Egg	1 egg	Lamp chop, broil'd	2-3 chop
Eggs, scrambled	1½ tablespoonfuls	Lamb roast	3"x2½"x¼"
Custard	3 tabelspoonfuls	Beefsteak, broiled	2"x1"xI"
Fish			
Cod, boiled	1"x1"x1½"		
Haddock, boiled	1½"x1"x1"		
Oysters	7 oysters		

GROUP III
(No restrictions)

Vegetables	Fruits	Miscellaneous
Turnips	Watermelon	Sugar
Carrots	Plums	Syrup
Cabbage	Pears	Candy
String beans	Peaches	Honey
Cucumbers	Strawberries	Maple sugar
Cauliflower	Grapes	Butter
Celery	Apple sauce	Cornstarch
Tomatoes (fresh)	Grapefruit	Arrowroot
Tomatoes (cooked)	Raspberries	Tapioca
Lettuce	Blueberries	Post toasties
Asparagus	Muskmelon	Maple syrup
	Apples	Olive oil
	Pineapple	
	Prunes	
	Oranges	

Any full portion in Group 1 shall count 1 and any full portion in Group II shall count as 2. Any portion from Group III counts nothing. For each count there is approximately 4 grams of protein, so that if one is allowed to count from 15 to 18 for the three meals, they will be receiving from 60 to 72 grams of protein a day, which is the average amount necessary. While this is not a full diet, it is a very comfortable one and patients can soon be taught to use it intelligently. The weight should be kept at the ideal normal.

Apoplexy may be discussed more fully with patients without having a deleterious effect on their morale. One may speak frankly and say to hypertensives that if they do not avoid violent exercise and fits of anger, they may break a cerebral blood vessel and suffer a stroke. They should be taught the art of self-control. They should be advised to relax at intervals and perhaps to read a little booklet "The Majesty of Calmness" by William Jordan. Bromides in full doses for two or three weeks, repeating the course from time to time, may be used to excellent advantage, not only in relieving nervous tension, but also in actually reducing the pressure. Symptoms of headache, precordial oppression and fatigability may disappear under this treatment. I consider bromides a very helpful drug in the treatment of hypertension. If there is more of an emergency, stronger sedatives may be used, such as chloral or luminal and bleeding is not to be entirely forgotten.

Calcium has recently been suggested in the treatment to reduce blood pressure. It is supposed, pharmacologically, to have a beneficial effect on the autonomic nervous system, making the balance between the sympathetic and para-sympathetic more even. An irritable or unopposed sympathetic system may respond, under certain conditions, to various stimuli, either toxic or reflex, to produce a vaso-constriction, especially of the smaller arterioles and an elevation of blood pressure. In support of this action of calcium there is some experimental evidence. Patients with high blood pressure have been found to have a lower blood calcium content than normal. More interesting, perhaps, is the fact that animals fed on a calcium free diet, soon become irritable and restless. They will often snap at and bite their keepers. With the restoration of calcium in the diet, they again become mild, even tempered and may be handled without fear. Calcium may be supplied in the foods. The foods richest in calcium are milk and the leafy vegetables. One quart of milk contains approximately 25 grains of calcium. Since milk, on account of its high protein content, must be restricted in the diet, it is advisable to give additional calcium by mouth. The lactate or better the chloride given in 20 to 30 grain doses, three times a day, is perhaps the best method. This should be prescribed in blocks of from four days' to a week's treatment and that much rest period intervening before the next course. I have used it in a few cases and feel that it helps. It is certainly worth a trial. However, it must be known that it is still in an experimental stage and has not been in use long enough to warrant any definite statements. The calcium may be administered alternately with the bromides to a good advantage.

Toxemia from focal infection and from the gastro-intestinal tract may play a part in building up this complex. The bowels should be kept open, best with mineral oil or agar. It is often necessary to give them in larger doses than ordinarily for the desired result. If they fail, one may resort to some preparation of senna or cascara. In the absence of edema, the fluid intake should be adequate, at least 2500 to 3000 cc. A good rule is to keep the urine a light straw color and to let a darker urine be an indication for the patient to drink more water.

Any foci of infection about the teeth, tonsils or where not should be eradicated, providing there are no contra-indications. I would advise one to proceed cautiously with the extraction of full sets of teeth, unless your patient is in excellent general condition. The extraction will probably not in any way effect the blood pressure and it may start your patient down hill. These infections should better be cleaned up more gradually. The same general principles hold for focal infection elsewhere.

All other hygienic methods should be instituted to keep the patient in good general health, thereby warding off intercurrent infections. Treatment directed toward special symptoms which arise will, of course, have a gratifying effect on the patient.

Until we have more definite information as to the causes, let your treatment of essential hypertension be: First, the protection of the heart by correct physical exercise and mental attitude; second, the protection of the kidneys by reducing protein to the necessary requirement and gradually eliminating salt from the diet; third, the care of the nervous system where calcium and bromides may be used to advantage; fourth, the elimination of toxemia from bowel absorption or from focal infections; and lastly, the treatment of the all important general condition of the patient.

— 885 Brandeis Theatre Bldg.

HEMOPHILIA, WITH REPORT OF TWO CASES

Michael G. Wohl, M. D., Omaha, Nebr.

Hemophilia is always interesting for the reason that the location of the cause of the condition is still veiled in mystery; some believing that it is concerned with an alteration of the blood elements, such as, blood platelets, thrombokinase, prothrombin, calcium deficiency; others are of the opinion that it lies in the tissue of the vessels. Scientific experimental or clinical proof corroborating either theory is still lacking. The occurrence of hemophilia in practice often causes undue anxiety, as it pops up when least expected and then the checking of the hemorrhage will frequently tax all the resources of the physician.

The two cases are reported below: First, because of the unique method that has been used with success to check hemorrhage after all conventional methods have failed in case number one, and secondly, the unusual part of the body from which the bleeding took place in case number two.

CASE NUMBER ONE:

(This case is a patient of Dr. W. H. Pruner and is reported in cooperation with the doctor).

Baby Poole, male, age 5 days, was born June 11, 1925. Patient was first child of mother. Labor was normal. The baby was well developed, weighing 8 lbs. and 3 oz. No malformations noticed. The prepuce was adherent. The baby had difficulty in urination. Five days following delivery, he was circumcised. Two hours following circumcision some bleeding was noticed by the nurse. Pressure was used and glans penis rebandaged; however, hemorrhage did not cease. Two stitches were placed over the apparent bleeding points. The hemorrhage increased at each point where the needle was inserted. The stitches were removed and a continuous suture was run around the entire surface of the glans penis. Hemorrhage was apparently controlled. Next morning at 5 a. m. a slow oozing of blood was noticed around the line of operation. Monsell solution was applied to the bleeding surface. Blood apparently clotted. The same afternoon hemorrhage was again noticed. Bandage removed and additional Monsell solution applied with apparent success. It is noteworthy that the blood in this baby clotted slowly. Two days later bleeding again was noticed. Fibrinogen well saturated in cotton was applied locally, also fibrinogen given by mouth and subcutaneously. Bleeding continued. Saline and glucose were given by rectum continuously. 4 cc. of father's blood was obtained and injected intra-muscularly with no apparent effect. 4 cc. of blood obtained from a nurse that had a clotting time of 2 minutes, was injected into the buttocks of baby with no success. The child at this time was very pale, respiration shallow and rapid and had a pinched appearance. A solution of sheep's blood platelets was prepared and applied to the surface and also given subcutaneously. Oozing continued. Calcium lactate was given with nourishment, without apparent effect. Direct transfusion was though of; however, because of lack of a suitable donor, and the difficulty in performing this procedure in an infant deterred us from latter. It was finally decided to try a method we heard mentioned by Professor DaCosta in one of his lectures at the Jefferson Hospital during the winter of 1923. This method was as follows: A full grown rabbit was anaesthetized and liver removed under aseptic conditions. Liver placed in sterile meat grinder and well ground. About 3 cc. of sterile saline for each gram of liver substance was added to the latter. Same was placed in conical shaped vessel for about three quarters of an hour to allow the thrombokinase in the liver to become extracted. The mixture was filtered through gauze and the filtrate was saturated in cotton and applied to place of hemorrhage. Within 15 minutes from time of application, hemorrhage ceased. The extract was kept on all night. No oozing occurred. Upon cessation of bleeding the child gained rapidly and one week later was discharged from the hospital. About six weeks later we heard from the parents and the child appeared in perfect health.

Family history: The father, although not a true bleeder, yet gives a history of having had a severe hemorrhage following extraction of teeth. One child of the father's sister is known to be a true hemophiliac. No known history of hemophilia on mother's side.

CASE NUMBER TWO:

Mr. D. G.; dental student; age 22; patient of Dr. W. Hombach. Chief complaint upon admission to hostial: Patient is passing blood stained urine for the past two weeks. The color of the urine varies between deep red, towards evening, and pink during the day. Has no pain anywhere in his body; however when he bends over for any length of time, as in doing laboratory work at school, his back gets sore and remains so for a while. Patient urinated three to four times a day and none at night. The urine appears clear. The quantity of the urine is the same as it always has been. There is no pain or burning before, during, or after, urination.

Past history: Patient first passed a blood stained urine in 1920. This continued for about three weeks. He was not bothered again until a year later. Since then, he has been passing a blood stained urine whenever he "catches cold" or doesn't feel well. During the past three weeks, patient lost considerable weight and has been getting weaker. His normal weight is 165; his present weight is 152.

Patient had usual diseases of childhood. His mother claims, that while a baby, he would bruise very easily, otherwise has been well until 1920 when he first noticed blood stained urine.

Physical examination: Physical examination revealed no pathology of head, chest, abdomen, nor in the skeletal region. His skin, however, presents a white, yellowish appearance. No petechiae. The capillary resistance test of Hess for purpura hemorrhagica was negative. (The application of a tourniquet to upper arm for a few minutes produces petechae in purpura hemorrhagica but not in hemophilia). Mucous membrane of mouth pale. Superficial lymph glands not palpable. X-ray examination of both kidneys showed them to be normal in size, shape and position. No calculi could be demonstrated.

Cystoscopic examination and ureteral catheterization by Dr. McMartin revealed the following: About one pint of dark bloody urine obtained from bladder after cystoscope was inserted.

Bladder wall normal, except for slight edema and small area of ulceration at opening of both ureters into bladder.

Catheters passed up the ureters easily to pelvis of both kidneys and blood stained urine obtained from both kidneys, most marked from left kidney.

Laboratory examination: Urine showed almost pure blood. No casts, no bacteria of any kind could be demonstrated. The blood showed a hemoglobin varying between 45 to 50. Red cells varied between 3,000,000 to 3,700,000. Leucocyte count was 6,400 on one occasion and 14,700 on another occasion. Polymorphonuclears 70, small lymphocytes 24, transitionals 6; the red cells showed marked anisocytosis, poikilocytosis with a few microcytes and macrocytes. The tuberculin skin test was negative. Wassermann of serum of blood negative. Clotting time delayed to 45 minutes; retraction of blood clot with separation of serum not delayed.

(The usual method for estimation of clotting time by pricking the finger and obtaining the blood in capillary pipettes is fallacious for the reason that the blood becomes mixed with tissue juices and often gives erroneous results. The method that we found most reliable consists in obtaining blood directly from a vein into a syringe coated on the inside with a thin film of a petrolatum ether mixture, and then to expel 2 cc. into a wide, absolutely clean test tube. The time elapsing between the moment the blood is drawn and the moment at which an invertible clot is formed is regarded as the coagulation time).

The patient continued to bleed in spite of the administration of calcium lactate, coagulen, horse serum, gelatin, etc. At the end of 7 days patient was given 300 cc. of blood by the direct method. His general condition was improved, but there was still a fair amount of blood present in the urine. Patient was again transfused with 500 cc. of blood, a different donor being used. He continued to improve; at the end of 5 days he left the hospital in good condition. Since patient has been at home he has been given cod liver oil, calcium lactate and general nutritious diet.

We have heard from him within the last ten days and patient has improved to the extent of contemplating going back to school.

Family history negative on parents side as regards the existence of hemophilia.

CONCLUSIONS

1. The pathology of hemophilia is still in dispute; some believing that the condition is due to an alteration in blood elements, others are of the opinion that the vessel walls proper are at fault.

2. A fresh extract from rabbit's liver which is rich in thrombokinase was used successfully in checking hemorrhage, after all conventional methods have failed.

3. The most usual place of bleeding in hemophilia is from nose or mucous membranes; one of the cases described above had profuse bleeding from the kidneys. Blood transfusions arrested the hemorrhage.

NO NOVELTY TO HIM

A doctor was examining a man who had come to him for the first time. Satisfied at last, the doctor looked at him gravely. "You are in bad shape," he said. "What you need is a sea voyage. Can you manage it?"

"Oh, yes", replied the patient. "I'm second mate on the Anna Marie, just in from Hongkong."—Youth's Companion.

TO DECREASE EXCESSIVE SWEATING

The following astringent lotion is recommended in the Urologic and Cutaneous Review to decrease the amount of sweating and subsequent irritation of the skin:

℞	Aluminum chloride	℥ii
	Aquae Rosae	℥ii
	Aquae destillati	ad. ℥viii

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
Terminal Building, Lincoln, Nebraska.

F. A. Long, M. D., Editor............Madison, Neb.
R. B. Adams, M. D., Business Manager,
Centre McKinley Building, Lincoln, Neb., Tel. B2625

COMMITTEE ON JOURNAL AND PUBLICATION.
F. A. Long, Chairman............Madison
W. O. Bridges............Omaha
B. F. Bailey............Lincoln
R. B. Adams, Ex officio............Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewriten, double-spaced, not the carbon, submitted.

Reprints should be ordered from the printer, The Huse Publishing Co., Norfolk, Neb.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. X November No. 11

THE INCREASE IN MEMBERSHIP DUES

Reference has several times been made in these pages to the increase in membership dues ordered by the House of Delegates at the last annual meeting of the Nebraska State Medical Association. The increase is effective, January 1st, 1926, and is from $5.00 — the present dues, to $8.00. The increase was brought about, because the delegates believed that more money was needed in order that the Association might function better.

The Medical Defense Committee, which has done a great deal for the profession, was found to be short of funds to carry on the increasing amount of work piling up, due to increase in number of malpractice suits; the Publicity Committee, created several years ago, and from which much should be expected, has so far been unable to function properly for want of funds; the tendency of the times is toward centralizing the various activities of medical associations in an efficiency man, — a full-time paid executive secretary, editor and general manager, and many of those deeply interested in the activities and success of the Association, are looking forward to a time in the near future when money enough will be available to bring this about.

A survey made recently, shows the dues of a number of state associations to be as follows: Indiana, Nevada, $7.00; Massachusetts, Utah, $8.00; Wisconsin, $9.00; Arizona, California, Rhode Island, Texas, Wyoming, $10.00; Alabama, $11.50; Oregon, District of Columbia, $20.00.

There seems to be a general tendency toward increasing annual membership assessments so that the organization may function with greater efficiency.

A recent communication from Dr. Olin West, secretary, American Medical Association, says —

> "In most cases, in so far as my observation goes, raising annual dues has resulted in increased activities and increased efficiency. This was notably so in Wisconsin, where the dues were raised from $4.00 to $9.00. The work of the State Medical Association of Wisconsin, was tremendously improved and extended, and I have been repeatedly told that never in the history of that organization has there been as much interest on the part of the individual members, nor as much real satisfaction over the work of the organization, as is now in evidence".

The amount of increase is not large enough to quibble about and when we consider that the State Association concerns one's lifework, we may well, each and all, be cheerful givers.

THE CANCER PROBLEM

Interest in the cancer problem was renewed with unwanted enthusiasm by the announcement that two British scientists had discovered the cancer germ. The public received the announcement of the discovery in good faith only to have their hopes shattered by the conservative attitude of the medical profession. The profession was skeptical — a perfectly natural reaction because there was no greater claim made by the British scientists than that they had isolated a parasite from a chicken tumor; a tumor that is not correlated to any tumor in the human body. This tumor is known as the Rouse chicken sarcoma.

Whatever may be the outcome of these investigations, it is certain that so far as the present demands are effected there is no new development. The pressing problem is now, as it always has been — What can be done to lessen the frightful mortality of cancer?

As yet there is no known cause of cancer and surgery offers the greatest promise of cure in early cases, with radium and x-rays as helpful adjuncts.

That there is an increasing death-rate from cancer can be little questioned. After liberal allowance is made for improved methods in diagnosis, for more accurate reporting of cancer deaths, and finally for the ever-increasing numbers who live into the cancer age, it is apparent that the increase in cancer deaths has actually trebled since 1860.

Frederick L. Hoffman, statistician for the Prudential Insurance Company, in writing recently upon "Some Cancer Facts and Fancies" says that " the outstanding fact of the present cancer situation is the unmistakable increase in the actual and in the relative frequency of the disease among all the civilized races of mankind. He affirms that in the past forty years the cancer death-rate has doubled. Cancer is rare among native races and its ravages are greatest in civilized and urbanized localities. Hoffman has not found a single instance in which cancer has been contracted by a doctor or nurse in attendance upon a cancer patient and from this he reasons that cancer is not a parasitical disease as evidenced from the fact that cancer does not conform in its occurrence to known epidemiologic laws. He is of the opinion that dietary causes must be considered as an important factor in the development of cancer. Not one cause but many must be sought if we are to know the origin of cancer, thinks Hoffman. We know there are occupational causes as witnessed in aniline dye workers, x-ray operators, mule spinners and briquette makers; all giving rise to local irritation.

Happily, it is not essential that we know the cause or causes of cancer in order to clearly understand the manifestations of the disease and the manner of its control. Our duty for the present and in the light of what we do know about cancer is to educate the doctor, the nurse and the public in general in the recognition of precancerous lesions and the earliest signs of cancer and finally to apply the remedies at our command and at the earliest possible time.

The American Society for the Control of Cancer was organized twelve years ago for the purpose of promoting a campaign of education. It is estimated that near fifty million people in the United States and Canada have been reached through newspapers, magazines, the radio and public talks. In all there have been about 25,000 volunteer workers engaged in this undertaking.

The officials of the society are encouraged to continue the work so well begun because sufficient time has elapsed to demonstrate the good that is being done. More cases are coming to the doctor in the early stages of the disease; but, what is more encouraging, the profession is seeing more and more precancerous lesions. It is my firm conviction that the greatest progress will be made in the prevention of cancer by the doing away with the lesions which make for cancer. If we wait for cancer to develop, we have usually waited too long.

The American Society for the Control of Cancer with headquarters at 370 Seventh Avenue, New York City, will give all possible assistance to the profession in furthering propaganda among the lay public.

—Palmer Findley.

THE MISSOURI VALLEY MEDICAL MEETING AT ST. JOSEPH

This meeting, which took place the week of September 28th, offered a most excellent program. The attendance was not large, there frequently not being over thirty or forty present. It looked as though the St. Joseph fraternity did not turn out very well.

The plan for morning Dry Clinics was most excellent and they have a strong desire to continue this plan in the program for future meetings.

On Wednesday morning Dr. C. A. Good made a most excellent presentation of Hearts, with case histories, which was most interesting. On Thursday morning, Dr. L. H. Fuson had a splendid paper with a case history, and laboratory findings which had been thoroughly worked out on a case of diabetic coma, with complete recovery under insulin and proper balanced diet with glucose intravenously. After the paper was read, Dr. Fuson presented the patient, a woman of about thirty-eight, apparently in perfect health. She was continuing the use of insulin with proper diet.

At the same session Dr. W. R. Moore presented a most interesting paper on three cases of infection from a rabbit bite with recovery under the use of neo-salverson, intravenously. They were three children from the same family. The laboratory work on these cases was well done and revealed sperochetae in the blood, which led to an absolute diagnosis of the disease and prompted the use of the remedy. The cases were characterized by periods of chills and fever with intervals of several days duration. Many of the papers presented at the general session were of a high order and caused considerable discussion.

Dr. R. H. Babcock of Chicago; Dr. Edgar Allen of Columbia, Missouri; Dr. W. M. Boothby of Mayo Foundation; Dr. Carl Meyer of Chicago; Dr. S. R. Slaymaker of Chicago, were present as invited guests and presented interesting papers from their respective specialties.

The Smoker at the St. Francis Hotel, Wednesday evening, was very largely attended with a preponderance of men from St. Joseph who were not so active at the meetings.

The place selected for the next meeting was Council Bluffs, Iowa. Dr. A. D. Dunn of Omaha was elected president; Dr. Mat Tinley of Council Bluffs, Iowa, was elected vice president, and a recommendation was carried that at the ensuing meeting, the program be made up partly of Dry Clinics. Also that we have the Sioux Valley Medical Meeting join in a combined meeting.

Dr. McCrae of Council Bluffs, Iowa, was suggested as the program chairman, the meeting to be held October, 1926.

The Nebraska University College of Medicine was represented on the program by five essayists.

— * * *

ETIOLOGY, PATHOLOGY AND TREATMENT OF CANCER OF THE CERVIX

Before the Radiological Society of North America at Kansas City, December, 1924, Dr. D. T. Quigley, Omaha, (Radiology, July, 1925) advanced the propositions that cancer is a local disease in which overgrowth of cells is due to irritation by microorganisms and their toxic products. Any organism which continues to live in the tissues of the body as a low grade infection may supply the irritation which leads to stimulation of cell growth which we call cancer. There is, therefore, no specific organism which produces cancer, but many organisms and combinations of organisms which produce this disease.

The predisposing causes are mechanical injuries, chemical injuries and thermal injuries. These open the way for the immediate cause which is infection. This infection may come through the blood stream or lymph stream or from external sources. In cancer of the cervix we have a disease of childbearing women. The physiology of the normal genital tract is very different in the vagina and in the uterus. The secretions of the vagina are acid; those of the uterus alkaline. The vagina contains many microorganisms; the uterus is normally sterile. The vagina is covered with squamous epithelium; the uterus is lined with gland epithelium. When a laceration of the cervix occurs the gland epithelium of the cervical canal is everted from the sterile alkaline uterus into the infected acid vagina. The cells cannot survive and ulceration occurs. The os being destroyed, infection advances up the cervical canal and an endometritis results which throws out an irritating muco-pus which further irritates the ulcerated cervix. The long continued irritation finally leads to the proliferation of epithelium which we call cancer.

While local, it is curable by radium, but it is not a good locality for cure by surgery as the trauma incident to surgical removal is likely to force cancer cells to great distances in the lymphatics and there is much danger of contaminating the wound with direct transplants of cancer cells. This is why recurrence is the rule after surgical removal of the cancerous cervix even though the operation be done early. The body of the uterus having few lymphatics, it is a suitable place for surgery, and operation for cancer of the body of the uterus yields many cures.

The rule should be: Cancer of the cervix, never use surgery, radium is satisfactory; cancer of the body of the uterus, surgery is satisfactory. Quigley has had 67 cases of early cancer of the cervix and 66% of apparent cures ranging from three to seven years. Seven apparent cures on recurrent cases after operation.

RESOURCEFULNESS

The resourcefulness of the general practitioner has often been extolled. The following incident will be appreciated by all of us who have done, or are doing, country practice. A friend of the Journal relates that visiting a pathological laboratory he asked the doctor-technician what he had that was new. The doctor-technician produced a half portion of a hard boiled egg in the shell and remarked that it had been sent in by a practitioner of a small town out in the state. On the white portion of the boiled egg were two blue pencil marks walling off a small area. It was explained that the physician having no culture tube had utilized the egg for growing a throat culture from a suspected case. He had recalled the fact that diphtheria bacilli grow on egg albumin. The laboratory worker reported a pure culture of diphtheria bacilli on the culture medium. The country doctor had used his head and utilized the material at hand.

BACK ROW—(1) Dr. Gertrude Cuscaden; (2) Dr. Mattie L. Arthur; (3) Dr. J. M. Banister; (4) Dr. H. M McClanahan; (5) Dr. E. Holovtchiner; (6) Dr. A. F. Jonas; (7) Dr. J. P. Lord; (8) Dr. Harold Gifford; (9) Dr. W. O. Bridges; (10) Dr. J. H. Vance.

FRONT ROW—(1) Dr. S. R. Towne; (2) Dr. F. A. Long, Madison, Nebr.; (3) Dr. J. K. Newman; (4) Dr. W. H. Lanyon, Joplin, Mo.; (5) Dr. A. B. Somers; (6) Dr. Wm. S. Gibbs; (7) Dr. C. F. Clark; (8) Dr. W. L. Ross.

HONORING THE "OLD TIMERS" OF THE OMAHA PROFESSION

Quite an unusual and most enjoyable event was the informal dinner given by the Omaha-Douglas County Medical Society at the University Club, September 29th, in honor of the Pioneers of the Medical Profession of Omaha. Those so honored were the medical men and women whose careers date back to the seventies, eighties and nineties of the last century. The honor guests numbered eighteen (see cut) and several well known "old timers" were unavoidably absent. (Dr. W. H. Lanyon, Joplin, Mo., was an early day practitioner of Omaha, and the editor of this Journal was there by sufferance.) The honor guests were introduced separately and a number of them were asked to speak which they did quite entertainingly. About 250 physicians attended the dinner.

COLLOIDAL MANGANESE IN PSORIASIS

Herman Goodman of New York reports the action of Colloidal Manganese by intramuscular injection on psoriasis in a recent number of the Medical Review of Reviews.

Goodman writes that any suggested form of treatment for psoriasis seems worthy of trial. He undertook the use of colloidal manganese and found to his surprise that the lesions of psoriasis in a particularly resistent case cleared with ease. Fearful of post hoc, proper hoc, he increased the circle of usefulness among psoriatics, being especially careful to withdraw other forms of treatment, so that the virtues of manganese, if any existed should be dependable. Patients, who from former experiences, insisted upon some form of external therapy received unguentum aqua rosae.

The preparation used was that labeled "Pharmasols". The manganese is 0.25 per cent, in a colloid state, and is sold either in 1cc. ampoules or larger containers. The dose recommended for intramuscular use is one-half cc. gradually increased to 2 cc. in a course of 6 injections. The injections are given deeply into the buttocks, and there is little if any pain. The number of injections of the maximum dose (2 cc.) may be as high as six without any noticeable ill effect.

The modus operandi of colloidal manganese in psoriasis is not known. Goodman's conjecture is that manganese affects the capillary blood vessels in the pars papillaris, but has not made a large enough series of examinations of psoriatic skin under treatment. Recurrence of the old patches has already been noted.

The clinical results on the empiric use of colloidal manganese of commerce makes its wider use of interest at this time.

— Edward Chaloupka.

EDITORIAL PARAGRAPHS

New ads appearing in this issue are The Retreat, and St. Bernard's Hospital.

The average time served in the United States on life sentences, is eight years.

Prompt relief from urethral pain and burning frequently observed in women is said to follow daily instillations of 10 cc of a 1% of mercurochrome.

Anterior poliomyelitis is again taking its toll in deformities and deaths, being prevalent in various places over the state. The article by Dr. H. Winnett Orr in this number is very timely.

In the symposium on gallbladder disease in the October Nebraska State Medical Journal, Dr. W. J. Arrasmith took part in the discussion instead of Dr. W. W. Arrasmith as stated. The error was made by the stenographer who took the discussion.

The refinements of diagnosis are truly wonderful. The general practitioner calls a specialist who promptly decides that the diagnosis is wrong, but the treatment is absolutely correct. In other words a certain thing is not an apple, but a crab-apple.

It is said on what is considered good authority, that 55,538 cases of small-pox occurred in the United States during the year 1924. This is 9000 more than occurred in British India and twice as many as occurred in European Russia during the same period.

According to an experimental study made by Charles Spencer Williamson and Harold N. Ets (Archives, Internal Medicine, Sept. 15, 1925), inorganic iron has no therapeutic value in anemia, while the efficiency of food iron is very pronounced.

It is regretted that an error in regard to the time of the Dr. Sampson lectures on Physio-electrotherapy to be given in Omaha, occurred in the advertising pages of the October Journal. The dates of the lectures are November 9th to November 14th.

The editor of this Journal wishes to make a survey of the sons and daughters of Nebraska medical men who are studying medicine, or who are taking premedical studies, and to this end it is requested that individuals furnish this information by postal card or letter as soon as this request is read.

According to an opinion given by Assistant Attorney General Ayers, only regularly licensed doctors of medicine are privileged to practice physiotherapy in Nebraska. Whatever we may think of that opinion, it is pretty certain that the final decision will be different.

If you want a real human interest story read Rheta Childe Dorr's "A Woman of Fifty". You need not agree with all her moods, but you will agree that she tells her story in a straight-forward manner. There is an added interest in her story because she was a Lincoln girl.

An innovation in postgraduate medical teaching — the presentation of an entire specialty by means of the motion picture screen has been brought before the profession by Dr. Joseph Franklin Montague of New York in the study of rectal diseases. When thrown on the screen the perianal region is seen as an area of 9 by 12 feet.

The Kentucky Court of Appeals in a recent case decided that a parent is not liable for the debts of an adult child unless that child is physically or mentally incompetent to earn a living when arriving at the age of maturity. The fact that such person has always lived with the parent and has never earned a living does not make the parent liable. in the absence of a specific contract.

A dormatory of one of this state's educational institutions, housing 76 girls, has two toilet stools, one for every 38 girls, and yet we wonder why young women suffer from constipation. What opportunity have such students to take care of themselves between six a. m., the time they are called, and nine a. m., school time, allowing one-half hour for breakfast? Less than four minutes each.

We sometimes wonder whether the propaganda for the various reforms bring results. The following instance will show that even the very young are being educated in dietetics: Grandma told two-and-one-half-year-old Margaret that she must "eat her platter clean", whereupon little Margaret called forth one of her sweetest smiles and said, "I doesn't want to get fat, G'andma".

The Division of Vital Statistics of the Nebraska Department of Public Welfare has again found it necessary to lecture the profession by circular on dereliction in reports of births and deaths. Physicians who are systematic in their professional and business affairs will make these reports promptly and cheerfully; those without system or method will neglect. To which class do you belong?

A PHYSIOLOGIC CONSIDERATION OF THE GALLBLADDER

On the basis of data obtained from his own experiments and from the results of the many carefully conducted researches of other investigators, an hypothesis of a function of the gallbladder has been formulated by Frank C. Mann, Rochester, Minn. (Journal A. M. A., Sept. 13, 1924.). He has come to consider the gallbladder as a part of a mechanism whereby the secretory activity of the liver is correlated with that of the gastro-intestinal tract. Anatomically, the gallbladder must be considered a sampling apparatus, in view of the fact that only a portion of the total amount of bile secreted ever enters it. The gallbladder is filled mostly during active digestion. This fact can also be considered as most important in relation to the flow of bile and regulatory theories. The sphincter of the choleduct can as readily be considered a necessary mechanism for filling the gallgladder as for preventing the escape of bile into the intestine. The concentrating activity of the gallbladder would imply that some element of the bile is of value, and bile salts, as in the concentration in the gallbladder, are an efficient cholagogue. The most important objection to such an hypothesis is the question concerning the emptying of the gallbladder. Thus far it has not been proved that the gallbladder empties, or, in fact, that it can empty. Furthermore, no reciprocal physiologic action between the sphincter of the choleduct and the gallbladder has even been demonstrated, although many observers have suggested this as a possibility. One series of experiments performed by Mann gives some support to the possibility that the gallbladder bears some relation to hepatic activity. This experiment has been repeated several times on different animals, and the results have been uniformly the same.

ECHOES OF PECK'S CLINICAL TOUR TO EUROPE

By One Who Was Not A Member.

The day after Peck's Tour landed at Liverpool the "Post and Mercury" said:

"Once a flock of Yankees, feeling rather dry
Took a trip to Canada to get a case of rye;
When the case was opened the Yanks began to sing
Who in h—l is Volstead?—God save the King.

"The American doctors at the Guildhall banquet are said to have been impressed by the white-coated chefs who carve the barons of beef. This is regarded as a fine tribute to British surgery."—London Times.

An Englishman in the orthopedic ward of a London hospital said to his fellow patient—"Matron says as 'ow my case is so h'extraordinary that most of these 'ere 700 Yankee doctors is coming to 'ave a look at me."

"That's all right, Bill, but you keep yer eyes open, an' see they don't get snipping off bits of you for souvenirs."

Several returning fellow voyagers who had been with Peck's Tour said it was too strenuous; they would not do it again.

One man to whom it appealed said they "got in touch with nobility not otherwise obtainable".

The president of the "Interstate" was loaded down with degrees in every place visited and in turn scattered honorary fellowships of the "Interstate" with an abandon quite unlike the modest man the American profession adores. Even the ladies accompanying the party learned the formula and could recite in advance what the president would say on the next occasion.

Several felt rebellious about the five extra dollars Peck talked out of them for the Gildhall banquet.

Peck's profits were estimated by various members of the party as from $18,000 to $25,000.

Y. M. C. A. barracks and attic accommodations did not appeal to those who had paid for the better accommodations.

ANY MORNING IN YOUR TOWN

Sque-e-ek-Kre-e-e-ek-Zing-bang-"Damn
He must think his car a battering ram.
Can't you see bone-head I can't jerk loose
Till that limousine turns on her juice?
A car has as much chance in these streets
As a wooly lamb with the wolf he meets."
Whang-gr-r-rate—"I'd the right of way
I'll take his number if he gets gay!"
Sque-e-ek-kre-e-ek, zing, bang—"Damn"
Tinkle, tinkle—"Hold her man."
R-r-rip—"Gee that's a close call,
What do you think of that fellow's gall?
One more block to negotiate,
That means five minutes at this rate—
How in the h-h-heck will a fellow drive
In ten years more? Say, make it five!"

—D. B. E.

DR. A. QUACK—NERVE SPECIALIST*

(Dedicated to the Advertising Quack)

A doctor skilled in diagnosis,
So truthful, too, in his prognosis;
He makes a study of neurosis,
And cures with pleasant happy doses.
Dr. A. Quack.

His fame has spread throughout the nation;
He makes no charge for consultation;
His cures bring him felicitation,
And universal approbation.
Dr. A. Quack.

---

*Contributed by a chance acquaintance of the homeward voyage from Europe this summer, Dr. H. A. Cowing, Muncie, Ind., president of the Indiana State Board of Health.—(Editor).

He knows the public—madly speeding
For wealth and power, health unheeding;
He knows the cure that they are needing;
In practice he is always leading.
Dr. A. Quack.

His patients sit with smiling faces,
Cured of their ills. You see no traces
Of discontent; and many races
Are happy, joyous, in their places.
Dr. A. Quack.

To Dr. A. Quack here's a toast
Of gratitude we offer most
Truly, too, that he may boast:
"More patients cured from coast to coast."
Dr. A. Quack.

THE SOCIETIES

Before the **Lancaster County Medical Society**—the initial meeting of the year, Oct. 3, 1925—Dr. Miles Breuer gave a talk on the Diagnosis of Pulmonary Tuberculosis. He stressed the necessity of a systematic routine examination in these patients. Considerable stress was put on the careful history as well as a general physical examination. There was a plea throughout the talk for the early diagnosis of this malady.

Dr. Adams in opening the discussion of this talk established the point that if these cases are diagnosed early, they are much more amenable to treatment than the later cases wherein there is a self-evident diagnosis.

In a discussion of the talk, Dr. Covey established the point that a careful history is one of the most important factors in diagnosing these cases. Practically every case always will reveal a definite exposure at some period during the patient's life.

The second paper of the evening was read by Dr. Johnson, entitled "The Application of Business Principles to the Practice of Medicine." He stated that a professional man becomes a business man when he lays an excess stress upon the business side of his profession; that the application of business principles to the practice of medicine does not constitute commercialism; that the prime purpose of a profession is to render service to humanity; and that the making of money is necessary to accomplish this purpose, while in a business the prime purpose is to make money and the rendering of service is necessary to do so.

He stated further that the medical profession is in an era when every organization from the smallest to the largest is influenced by the edicts of business, and that in such an environment the problem is to maintain the integrity and attributes of a profession. He gave a close estimate of the net earnings from the practice of medicine exclusively in the state of Nebraska which he stated is approximately $1500.00 per year. He outlined a program whereby through savings, closer cooperation and the application of modern business principles, the net income of physicians can be increased on an average of $1000.00 per year.

Because the Workmen's Compensation Law is representative of the modern trend toward socialized medicine, the Doctor used it to illustrate the present day attitude of business men and politicians toward the medical profession, and condemned the practice of expecting and requiring physicians to perform professional services for industry for a fee less than the usual fee for similar service in the community. He stated that if logical conclusions are to be drawn from this social experiment, that the same measure of values should be applied to the profession as are applied to industry which is not being done at this time.

In closing, Dr. Johnson made a plea for the recognition of the role that medical economics is playing in the profession at the present time, and which, in his opinion, will continue in the future. He stated that the physician is primarily a human being; that he must more than live if he is to preserve his ideals and acquire the culture necessary to serve humanity justly and efficiently. It was his opinion that the medical profession should set about to study the subject of medical sociology and economics and solve the problem themselves instead of waiting for some legislature to recognize the incoordination and disproportion now existing which invites a solution by legislative means.

The discussion of this paper was opened by Dr. J. J. Hompes. The Doctor took an adverse stand on the general substance of the paper. It was his opinion that the practice of medicine is essentially individualistic in contradistinction to the essayist who regards the practice of medicine as a communistic commodity.

Dr. Adams spoke informally before the society of the injustice of our present income tax law and narcotic license tax law as it pertains to the physician. The Doctor appealed to the society to voice its protest to our congressmen, senators, and chairman of the income tax committee.

Dr. Hompes moved that an official letter be written by the society with the members' names appended thereto, which motion was seconded and carried.

—A. D. Munger.

One of the most delightful social-scientific medical meetings ever attended by the writer was the meeting of the **Madison County Medical Society** at Elgin, September 22nd. This society is composed of the profession of Madison, Stanton, Pierce and Antelope counties. The word had been passed along that all the ladies would be expected. The meeting was held at the spacious and beautiful ranch home of Regent Seymour, of the State University, just outside of the village of Elgin. The guests arrived during mid-afternoon and engaged in tennis and golf. Following this came the social hour. Dinner was served in the Seymour home by the ladies of the Elgin Bridge Club. The address of the evening was given by Dr. A. D. Dunn of Omaha, his subject being "Some Rambling Remarks About Conditions of the Heart." The subject was handled in a manner easily comprehensible by the ladies as well as by the doctors. Twenty physicians and their families attended, in all about fifty persons and on parting at ten p. m. there was general congratulation over a most delightful and most profitable meeting.

The fall meeting of the **Elkhorn Valley and Fourth Councilor District Medical Societies** was held at the Country Club, Norfolk, September 29. Owing to rain all over north Nebraska the previous night and the hunting season having lured some doctors to lake and sandhill, the attendance was disappointing. The program was an unusually good one, as follows:

Treatment of Pulmonary Tuberculosis, Dr. G. W. Covey, Lincoln, Nebr.

Fractures of the Elbow (Lantern Slides) Dr. Rob't Schrock, Omaha, Nebr.

Prostatitis, Dr. A. D. Munger, Lincoln, Nebr.

Goiter, Dr. S. A. Campbell, Norfolk, Nebr.

A Paper, Dr. Adolph Sachs, Omaha, Nebr.

The Custer County Medical Society at a meeting October 13, at Broken Bow, had the dentists as their guests. Dr. W. L. Shearer, noted oral surgeon of Omaha, spoke on "Focal Infection of the Mouth."

HUMAN INTEREST TALES

Dr. Walter Benthack, formerly of Omaha, has located at Pierce.

A Doctor Magill, hailing from Wichita, Kan., has located at Curtis.

Dr. A. E. Reeves, Farnam, attended clinics in Chicago last month.

The new Masonic infirmary, Plattsmouth, was opened in September.

Dr. E. J. Latta, Hastings, has been suffering from neuritis for some time.

Dr. Chester Thompson, Omaha, attended clinics in New York during October.

Dr. J. M. Liggitt, has left Farnam for a government position at Rice, Ariz.

Dr. W. L. Curtis and Mrs. Alice Long, Lincoln, were married September 15th.

Dr. and Mrs. A. C. Stokes, Omaha, have returned from a motor trip to California.

Dr. Paul E. Flothow of the Mayo clinic visited his parents in Omaha recently.

Dr. E. A. Drake, Kearney, has gone to Europe to do special postgraduate work.

Dr. H. J. Hewitt, has moved from Ainsworth to Inman to practice his profession.

Dr. C. J. Reilly, for some years in practice at Beatrice has located at Thomasville, Ga.

Dr. W. N. Anderson, Omaha, spent the month of October in New York in postgraduate study.

Dr. J. C. Thompson, Lincoln, has gone to Chicago to take special work under Smithies and Woodyatt.

Dr. and Mrs. William Sandusky, Seward, have returned from Vienna, where the doctor attended clinics for four months.

Dr. James Anderson, Kennard, has been suffering for some time from an injury received while playing ball early in September.

Drs. H. R. Brown, J. C. Waddell, and F. W. Buckley, Beatrice physicians, attended the Tri-State medical meeting at St. Paul, Minn., last month.

The Nebraska supreme court has affirmed the verdict of the Adams county district court in the conviction of Dr. C. L. Egbert of manslaughter.

A malpractice suit against Dr. D. T. Quigley for the "modest" sum of $35,000 was decided in the doctor's favor in the Douglas county district court last month.

Dr. W. S. Fast, superintendent of the Hastings State Hospital, was elected president of the Mid-West Hospital association at a recent meeting at Hastings.

Dr. H. J. Lehnhoff, Lincoln, president-elect of the Nebraska State Medical Association, has been ill with a heart affection since August, but is gradually improving.

Dr. Fred J. Wurtele, North Platte, was appointed by Governor McMullen as a delegate to the American Hospital association meeting held at Louisville, Ky., last month.

Dr. H. A. Smith, a major in the medical corps of the army, stationed at Kansas City, Mo., at one time a practitioner of Fremont, visited the latter place early in October.

Dr. Andrew Sinamark, formerly of Fremont has become associated with Dr. A. D. McCannel, Minot, North Dakota, in the practice of the eye, ear, nose and throat specialty.

Dr. John Osborne Polak, Brooklyn obstetrician, was the guest of the Omaha-Douglas County Medical Society at the University hospital on the evening of October 6th.

The office of Dr. R. G. Henderson, Falls City, was entered during the doctor's absence recently, and some minor articles purloined. It is thought to have been the work of a dope fiend.

Dr. George N. White, for eight years assistant superintendent of the Hastings State Hospital, has taken a position with the Norwalk (Calif.) State Hospital, and has moved to that place.

Dr. G. B. Desparois, for fifteen years in practice at Pierce, has sold his residence to Dr. Walter Benthack, Omaha, and will go to Philadelphia for a year's special work in internal medicine.

The Northeast Nebraska Medical society gave a farewell dinner and social in honor of Dr. and Mrs. Lucien Stark, at the Wayne country club, Sept. 29th. The Stark family have moved to Florida.

Dr. L. L. Jones, fifteen years ago, medical superintendent of the Nebraska Sanitarium at Hastings, has returned from the Glendale (Calif.) Sanitarium to again take charge of the Hastings institution.

Scholarships on the Oliver-Rea Foundation for graduate study in Medicine are available at the New York Post Graduate Medical School and Hospital. Inquiries should be addressed to the Dean, 301 East 20th Street, New York City.

NECROLOGY

James C. Hay, Laurel, Nebr.; Manitoba Medical College, 1895; a practitioner at Laurel for more than a quarter of a century; died about the twelfth of October, after an illness of about one year, aged about 64 years.

BOOKS RECEIVED

EYE, EAR, NOSE & THROAT MANUAL FOR NURSES. By Roy H. Parkinson, M. D., 16 Mo. Cloth 207 Pages with illustrations. Price $2.25. The C. V. Mosby Co., St. Louis, 1925.

OCULAR THERAPEUTICS. By Dr. Ernest Franke. Translated by Clarence Loeb, A. M., M. D. 8 Mo. Cloth, 183 Pages. Price $3.50. The C. V. Mosby Co., St. Louis, 1925.

ASTHMA, HAY FEVER, URTICARIA AND ALLIED MANIFESTATIONS OF ALLERGY. By Wm. W. Duke, Ph. B., M. D. 8 Mo. Cloth, 339 Pages with 75 Illustrations. Price $5.50. The C. V. Mosby Co., St. Louis, 1925.

FROM INFANCY TO CHILDHOOD. By Richard M. Smith, M. D. 10 Mo. Cloth, 105 Pages. Price $1.25. The Atlantic Monthly Press, Boston, 1925.

THE PRACTICAL MEDICINE SERIES. PEDIATRICS. By Charles L. Mix, A. M., M. D. GYNECOLOGY. By Thomas J. Watkins, M. D., F. A. C. S. OBSTETRICS. By Joseph B. De Lee, A. M., M. D.

GENERAL SURGERY. By Albert J. Ochsner. M. D., F. R. M. S., LL. D., F. A. C. S., F. R. C. S. Ir. (Hon.) 20 Mo. Cloth, average number of pages 540. Price per volume $2.00. Per set of 8 Vol. $15.00. The Year Book Publishers. 304 So. Dearborn St., Chicago, 1924.

METHODS IN SURGERY. By Glover H. Copher, M. D. 9 Mo. Cloth, 232 Pages. Price $3.00. The C. V. Mosby Co., St. Louis, 1925.

INFECTION, IMMUNITY & INFLAMMATION. By Frazer B. Gurd, B. A., M. D., C. M., F. A. C. S. 8 Mo. Cloth, 329 Pages. Price $5.00. The C. V. Mosby Co., St. Louis, 1925.

LOCAL ANESTHESIA. By Arthur E. Hertzler, A. M., M. D., Ph. D., LL. D., F. A. C. S. 8 Mo. 272 Pages with 140 Illustrations. Price $5.50. The C. V. Mosby Co., St. Louis, 1925.

SYMPTOMS OF VISCERAL DISEASE. By Francis Pottenger, A. M., M. D., LL. D., F. A. C. F. 8 Mo. Cloth, 394 Pages with Illustrations and color plates. The C. V. Mosby Co., St. Louis, 1925.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. Edited by Walter G. Elmer. Third Series. Vol. XLVI. Cloth, 892 Pages, with Illustrations. Dornan, printer, Philadelphia, 1924.

SOME INDICATIONS FOR THE ADMINISTRATION OF THYROID PREPARATIONS

Apart from the classical myxoedema and cachexia strumipriva, Prof. Fr. Muller (2nd Med. Univ. Clinic, Munich) emphasizes the following indications. With some young women, the neck becomes strikingly thin and hollow after the birth of the first or second child, evidently for the reason that pregnancy caused exhaustion and atrophy of the thyroid gland. Further, abortive forms of myxoedema are not infrequently seen in elderly women who consult the doctor on account of their mental and physical tiredness. They feel cold and long for warmth, their skin is dry; they feel they are growing indolent, incapable of making up their minds, have a tendency to become stout, especially on the hips, their sexual impulse has very much decreased, serious books, concerts, lectures, no longer afford them pleasure. In some cases there is also considerable anaemia with high colour index. In cases of this kind, 0.1—0.2 gm. dried thyroid gland daily usually suffices to remove the symptoms and especially to stimulate the psychic interests. The same doses, given consistently may further have an astounding curative effect in ichthyosis, psoriasis and above all in scleroderma (especially sclerodermie en plaques), further in some chronic articular diseases, in obstinate oedema due to disease of the kidney and in obesity. (D. Ther. d. Gegenw. No. 3, 1925).

THE TONGUE IN RELATION TO INTERNAL DISTURBANCES

By Prof. Josef Wiesel (From a post-graduate course at the Vienna Med. Faculty).

The deep red, fleshy, segmented lingua plicata or scrotalis is often seen in neuropathic patients and persons suffering from hereditary achylia and cholelithiasis. Lingua geographica with its roundish, vividly red foci, surrounded by a yellowish-white border, is supposed to be connected with exudative diathesis. On the other hand, quite smooth tongues with few papillae are also found with constitutional abnormalities; they have further been observed in cases of septic disease and pernicious anaemia (Hunter's tongue). Dryness of the tongue and paraesthesia may sometimes occur before menstruation, especially in young girls. During pregnancy the tongue occasionally shows an acromegaloid growth. Pain in the tongue may be an early symptom of pernicious anaemia, but also occurs with infectious diseases. Tremor of the tongue is sometimes found as an early symptom of Graves' disease or tetanus. Cyanotic discolouration of the under side of the tongue (venous stasis) is a sign of commencing cardiac decompensation (Neusser).

AS A SIMPLE TREATMENT FOR OXYURIS

F. H. Lorenz (Hygien. Staats-Inst., Hamburg) recommends in the first place water enemas every evening regularly, as they at once relieve the itching. In the particles of faeces which adhere to the anal ring, there are always masses of eggs of oxyuris. The minute worm (not yet visible to the naked eye) which hatch out of the eggs, cause the troublesome irritation. It is also sufficient to wash the whole anal region and anal ring regularly after every motion of the bowels. After only 8—14 days, the worms disappear and do not recur if this toilet of the anus is continued. The water enemas are only necessary in the first days when there is still itching at night. After the anal region is washed, it should be left to dry gradually by itself. (M. Kl. No. 3, 1925).

KILLING TUBERCLE BACILLI

It is doubtful whether the usual fumigators will be of any value in destroying these (tuberculosis) germs. The only practical, reasonable and effective treatment for a house or room that has been occupied by a tuberculous patient, is a thorough cleansing with soap and water; mechanical removal of material likely to contain the germs is preferable to disinfection and fumigation. (Jour. A. M. A., Sept. 12, 1925, p. 845).

COLOR

The love of color, time and time again,
Has blessed my life's vicissitudes; so, when
  The time has come that I should cease to live,
  And I, O Death, must heed at last your call,
  I shall be satisfied if you will give
  My soul just color—color—that is all:
I want not either blackness nor white light—
I pray that mine may be a rainbowed night.
—From "The Flower Grower."

In the case of intussusception you must make the diagnosis on the story from the mother. You can make it a hundred miles from the patient. It is always the same story. It occurs from six months to two years. Here is the story: The baby woke up with a pain it had never had before. It had had colic, but never such a pain as this. Then the mother says, "It began to pass mucus, then muco-blood and then blood." Then you know what has happened. You have intussusception; violent pain, followed by mucus, muco-blood and blood. If you operate at once you can save the patient. If you wait, the patient will die.—Dr. W. W. Harper (South. Med. Jour.)

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, December, 1925 No. 12

CONTENTS

Page

Adenoids and the Pharyngeal Bursa: Their Structure and Morphology, H. B. Lemere, M. D., F. A. C. S. 453

Diagnosis and Treatment of Ductless Gland Disorders, Wm. Engelbach, M. D. 459

Urinary Antisepsis—The Clinical Application of Experimental Data, Edwin Davis, M. D., F. A. C. S. 466

Modern Aspects of Nutrition, Victor E. Levine, M. A., Ph. D. 471

The Dietetic Treatment of Diabetes Mellitus, F. L. Rogers, M. D. 478

The Prognosis of Early Syphilis, Otis W. Martin, M. D. 480

A Case of Complete Heart Block, Arthur L. Smith, M. D. 481

Page

EDITORIALS—

Dues for 1926 482

What of the Stewardship? 482

Income Tax Report Deductions 483

A Glimpse of the Life and Work of Louis Pasteur 483

The End of Volume X 484

The Clinical Congress at Philadelphia 484

The Inter-State Post-Graduate Assembly of America 485

Oculists Or Optometrists—Which? 485

Editorial Paragraphs 486

The Societies 487

Human Interest Tales 488

Necrology 488

Membership Nebraska State Medical Association, 1925 489

ADENOIDS AND THE PHARYNGEAL BURSA: THEIR STRUCTURE AND MORPHOLOGY*

H. B. Lemere, M. D., F. A. C. S., Omaha, Nebraska

The subject of this paper was suggested by the following case:

Mrs. S. Age 27. First seen January 30th, 1923. History of chronic discharge from both sides of nose and severe headaches all her life. Was operated upon intra-nasally three months before this examination, both antra having been opened and the ethmoids and sphenoids exenterated.

Examination showed all sinuses open with large amount of pus coming from them. Patient was put under cleansing treatment and improved, but she returned on April 8th, 1924 complaining that her head was "stopped up." A large boggy swelling was seen through the nose in the naso pharynx. On lancing this through the nose, thick yellow pus escaped under pressure which had the same foul odor as pus from a peritonsillar abscess. The incision made at the operation remained patent and in spite of applications of trichloracetic acid to the cavity, it continued to discharge thick viscid mucus.

June 21st, 1924, the sac was removed under general anesthesia. The approach was through the mouth raising the palate with retractor. Tissue was removed over an area about three-fourths of an inch square on the posterior pharynx, portions of the thickened walls of the bursa being grasped with forceps and snared. The base of the cyst on the pharyngeal wall was smooth. It was impossible to say if it had an epithelial lining. Healing was uneventful.

The pathologists examination of one of the larger pieces removed showed a large aggregation of mucus glands resembling salivary gland tissue. (Fig. I).

A series of examinations of adenoids removed by me at the University of Nebraska Hospital was made to see how often these mucus glands occurred in adenoid tissue.

My specimens were obtained by the LaForce Instrument. Dr. Kelley's adenotome was also used.

The technique followed in obtaining the specimens examined was (1) the use of a freshly sharpened blade, (2) the instrument pressed very firmly to posterior wall of the pharynx, (3) then held there by one hand while the other hand pushed the blade home, thus avoiding any pull on the finger rings. If the second and third points in this technique are not followed, one is liable to draw the instrument away from close contact with the posterior wall, and thus leave the base of the adenoid.

---

*From the Section on Oto-Laryngology, College of Medicine, University of Nebraska, Omaha, Nebraska. Presented before annual meeting Nebraska State Medical Association, Lincoln, May 12-14, 1925.

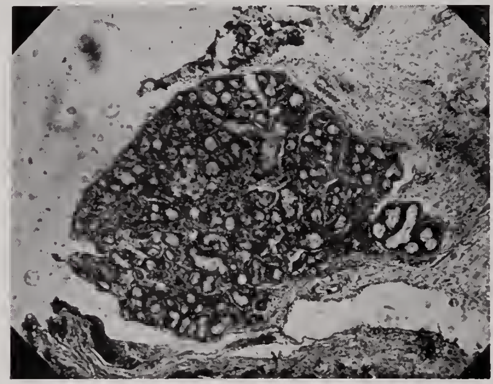


FIG. I. Mrs. S—Wall of pharyngeal bursa. The wall consisted largely of mucous glandular tissue as in the above section.

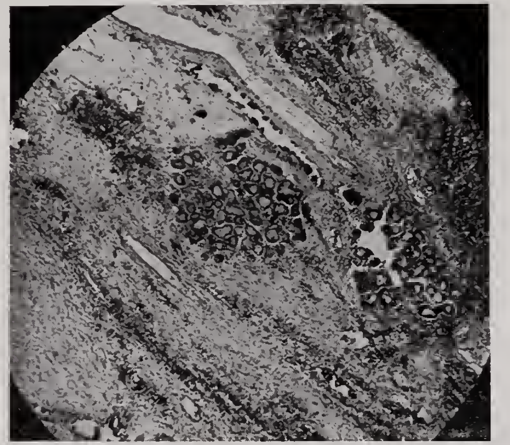


FIG. II. Section of atrophic infected adenoid removed from child who had nasal sinus infection and who had progressive arthritis. The fibrous capsule is infiltrated and thickened and the mucus glands seem small and atrophic.

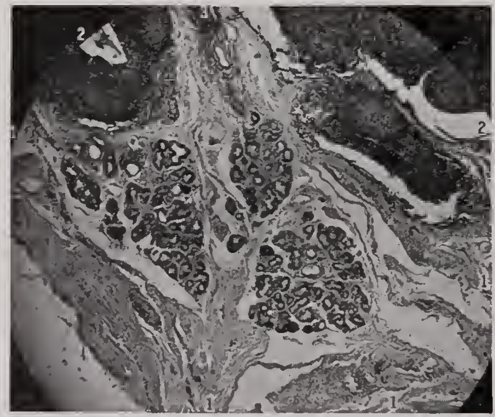


FIG. III. Capsule of normal adenoid, except for infiltration and hypertrophy. (1) Fibrous capsule with mucus glands; (2) sulci in adenoid; (3) fibrous structure running into ridges between sulci.

The question may arise whether the adenoid should be removed in its capsule or whether it is better to leave the capsule with its mucus glands, only removing the superficial lymphoid tissue. I am not prepared to give any clinical findings which would throw any light on this. The use of the naso-pharyngoscope leads me to the conclusion that anything except a clean out operation is liable to result in remains of adenoid tissue.

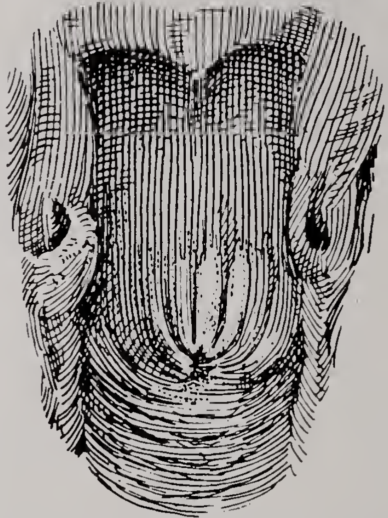


FIG. IV. "The pharyngeal tonsil in the foetus. The naso-pharynx of an 8-month foetus, showing ridges of adenoid tissue radiating like an aigrette from the central and median pharyngeal recess — the depression which, later in life, may be met with as bursa pharyngea or pouch of Rathka."—St. Clair-Thomson.
Thomson's note above does not agree with Atterbury(5) who says "Huber has shown conclusively that the human bursa pharyngea arises at a point which is separated from Rathke's pocket by nearly the length of the vault of the pharynx".

Sections of adenoid tissue which has been removed in capsule, (Fig. III, Nos. 1 and 2) show the mucus membrane of the pharynx here becomes thickened to form the adenoid capsule in which mucus glands are numerous

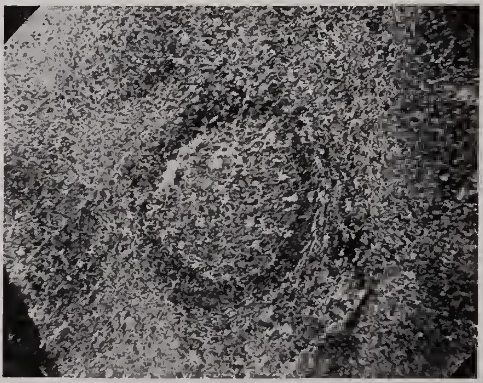


FIG. V. Follicle of adenoid tissue proper differing only slightly from similar follicles in tonsillar and lymphatic gland tissue in other parts of the body. From same slide at Fig. II.

and so aggregated that they form a definite secreting glandular entity. The ducts of these glands seem to lead to the furrows or cypts of the adenoid and empty into them. The capsule sends out fibrous trabeculae into the ridges of the adenoid supporting them and carrying their vascular supply. The adenoid lobes or ridges are very like the lymphatic mass of the tonsils and consist of the round or oval rings, well differentiated from the leucocytotic mass held in the fine reticular tissue surrounding them. These so-called germinal rings are considered by Latta(18) as containing degenerative areas instead of proliferating cells. (Fig. V).

The microscopic findings also indicate that a sharp cutting instrument as the LaForce or Kelley's should be used in preference to curettes which have a tendency to strip away the fibrous capsule and leave it hanging in shreds. If an effort is made to remove the adenoid tissue just superficial to the tunica proper it is conceivable that the mucus glands may be left without injury to their ducts so that they may continue to functionate.

One of my specimens was taken from a child suffering from arthritis deformans. (Fig. II). There was involvement of all the nasal sinuses and diseased tonsils. The adenoid showed considerable infiltration throughout the whole adenoid with increase of the fibrous elements in the capsule and decrease of the mucus glands.

During these studies a boy seventeen years old presented himself for treatment at the Dispensary of the University of Nebraska, Medical Department. He was suffering only from a mild acute ear condition, but he had an anatomical condition of cleft palate which was extremely interesting and presented for direct inspection an adenoid development which had never been interfered with by pressure from the palate or by drainage from the nose. The adenoid was symmetrical and free from infection and represented, I think, a normal adenoid neither hypertrophied nor atrophied. The central valley was quite deep and presented a round opening, I thought, leading to a bursa, but on probing I found the two median lobes were only slightly adherent and could easily be separated, converting the round opening into the median furrow. The structure showed that the lobes radiated as the rays from the half of an oval exactly as shown by Escart in his article. This I think, is perhaps the normal structure. The central lobes were perpendicular and were the largest and longest and as the radial lobes approached the horizontal they became shorter and smaller and the intervening valleys more shallow, the whole forming a beautiful symmetrical figure somewhat similar to conventional figures used in decorative art. (Fig. IV).

The examination of my cleft palate case and the microscopic and gross examination of hypertrophied adenoids after removal and the examination of microscopic sections of the cyst wall removed in my pharyngeal bursa, seem to point to pharyngeal bursa, Tornwaldt's Disease, and pharyngeal cysts being of common origin and taking their commencement in the deep central crypt in the lower part of the adenoid. The adherence of the walls of this sulcus producing either (1) obliteration (2) an open bursa, or (3) a closed cyst according to the manner and degree of adhesions.

The adenoid is not visible in its entirety by Holmes' naso-pharyngoscope and the post-nasal mirror gives such an oblique view that no picture can be visualized of its symmetrical form. (Fig. VI). Only dissection (Escat), or in cleft palate cases or with Dr. Kelley's instrument can a direct front view of the adenoid be obtained.

The literature on these bursae and also the different text books and other descriptions of the adenoid tissue were so interesting to me that I have given them here.

Johnston(1) removed a cyst from the pharyngeal wall. The walls were made up of connective tissue covered externally and internally by cylindrical epithelium. He states that the cyst springs from lateral remains of the pharyngeal tonsil, and is formed from a single mucus gland.

According to Wright's(2) article which appeared in 1895, Thornwaldt in his paper published ten years previously, stated that sinuses of the naso-pharyngeal mucus membrane were very frequently the seat of chronic inflammation and the origin of the symptoms of post nasal catarrh; that the pharyngeal bursa is a normal structure of the naso-pharynx; that naso-pharyngeal cysts are very common. Wright disagreed from Thornwaldt and said that sinuses in the naso-pharyngeal mucus membrane are not very common, that naso-pharyngeal cysts are rare and that the pharyngeal bursa is the result of chronic inflammation and not a normal structure. He reports a cysts in the lymphoid tissue without any epithelial lining which he thinks is a dilated lymph space.

Figi(3) reports two cysts similar to the one reported here. He states that though a careful examination of the naso-pharynx is made in every case in the Section on Laryngology in the Mayo Clinic, these two cysts were the only cases observed. He gives a full bibliography of the anatomy and pathology in relation to this region and concludes the cysts were occlusion cysts of the pharyngeal bursa. As to the origin of the pharyngeal bursa he quotes Cunningham(4) as follows: (1) the remains of Rathke's pouch from which the anterior lobe of the pituitary is formed (2) a crypt developed in connection with the pharyngeal tonsil (3) an independent outgrowth of the mucus membrane and after stating that each of these views has its adherents, says the last is most generally accepted. Figi did not state whether he had made a microscopic examination of the cyst wall.

I think there is some confusion between these cysts of the adenoids and the pocketings in the pharynx seen in the fetus and known in embryology under the same name "pharyngeal bursa."

Ruth Rand Atterbury(5) in her study of the Bursa Pharyngea concludes "It is advisable to emphasize again the mechanical nature of the pharyngeal outpocketings in the calf, (when present) pig, and human embryos. These structures are merely mechanical expressions of the growth conditions of the pharyngeal region, arising in accordance with the presence of the mechanical factors determining them. The bursa pharyngea of man, therefore, cannot be considered a structure of fundamental significance, essential to the development of the pharyngeal tonsil, as Schwabach maintained. If it were essential, its presence might reasonably be expected in the pharyngeal roof, (dorsal), of all forms which possess a well developed pharyngeal tonsil. It has been shown that the calf is a form possessing a well defined pharyngeal tonsil, but in the calf a pharyngeal pocket corresponding to the bursa pharyngeal of man does not regularly develop. There is, however, one outstanding feature common to the pharyngeal region of the calf, pig and human embryos, namely a close relationship between the fibers of the fascia pharyngobasilaris and the pharyngeal epithelium." (Fig. 4).

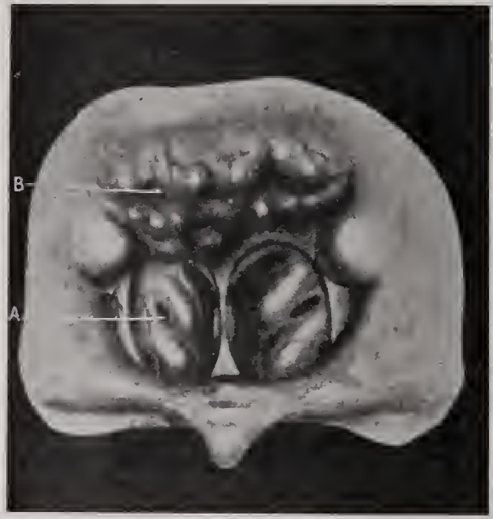


FIG. VI. Showing the view obtained by a throat mirror. The back wall of the pharynx (Fig. IV) is not seen. Only the extreme overhanging top of a hypertrophied adenoid is shown. With this metbod of examination the real shape of the adenoid is never seen. (A) Posterior nares; (B) overhanging top of adenoid. Its connection to the remainder of the adenoid is not shown.

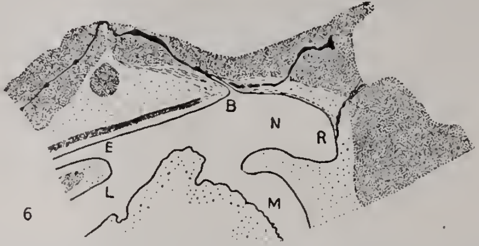


FIG. VII. (Human Embryo, Cornell Collection) 46 mm. (E) Esophagus; (N) naso-pharynx; (L) larynx; (M) mouth; (R) persistent stalk of hypophysis—Rathke's pouch; (B) bursa pharyngea. From Atterbury(5)—author's lettering.

Kyle(6) states "The third or pharyngeal tonsil, or tonsil of Luschka—differs little in structure from the faucial tonsils and is composed of a mass of adenoid tissue thickly placed, in which are numerous follicular glands."

Phillips(7) says "The fornix is the seat of the pharyngeal or Luschka's tonsil, a lymphoid glandular structure which exists in this region in the shape of a yellowish-red, soft, irregular swelling," (Fig. VI) and also "the lymphatic tissues which bear the name 'adenoids' are a series of lymph-glands which are superficially located in the mucosa of the vault and posterior wall of the naso pharynx."

St. Clair Thomson(8): "Historically these growths are made up of lymphoid tissue, i.e. groups of round cells in a small amount of connective tissue."

Gruber(9): "According to Lowenberg, they consist of a network of fine fibrillae, in the meshes of which are found numerous lymph-corpuscles."

Lennox Broune(10): "They are composed of lymphoid follicles, embedded in a retiform adenoid tissue of His. and are covered by columnar ciliated epithelium; cilia, however, are often absent at points of frequent contact or of friction with the soft palate."

Ballenger(11): "Like similar glands elsewhere, the pharyngeal adenoid tissue consists of a fibrous connective tissue framework supporting masses of lymphoid cells, but owing to its peripheral position it differs from the more deeply placed lymphatic glands in having an epithelial covering upon its free surface. The supporting framework consists of fibrous septa passing through the substance of the gland, from which a very delicate connective tissue net-work ramifies in all directions toward the surface. It carries in it the bloodvessels and the lymphatics, while here and there, lying in clusters in the septa, may be seen many mucus glands whose ducts open on the surface. In the meshes of the delicate network lie masses which forms the main bulk of this tonsil. Groups of these cells are especially differentiated in the form of more or less rounded or oval-shaped areas, having centres of a pale appearance, while their margins are more darkly colored. These areas are the follicles or germ centres of Goodsir. Covering the free surface of the tonsil, and dipping down into its recesses and crypts, is a layer of ciliated epithelium, continuous with that lining the respiratory part of the interior of the nose and the adjacent mucus membrane of the epipharynx. The epithelium consists of more than one layer of cells, the superficial ciliated cells being columnar in type, while the deeper cells forming two or three layers are smaller, and rest upon a well-defined basement membrane."

Wright's(12) description of the adenoid and other structures of the pharynx is very complete. He says the adenoid "consists of two median recess and two lateral ridges bounding the two lateral furrows externally, their internal walls being the external aspect of the median ridges. We must repeat the remark that this is seen in a large number, but possibly not in the majority of children under four years of age. Many, it is true, present a much more complex aspect, more irregular branches of conglomerate papilliform or bulbous lymphoid hyperplasias. In, however, the large proportion referred to, sections show more or less regularity in the epithelial covering, while close beneath it are more or less regular rows of lymph nodes or germinal centres of lymphocytes and their derivatives, the nuclei split off from them, usually supplied with a scarcely discernible cell body in their nascent state. Beneath this layer the stroma bears not only a diffuse infiltration of lymphoid cells, but often the ducts of racemose glands, while beneath this still is the firmer fibrous layer which shades off into the fascia of the pharynx."

He(13) further describes the minute structure of the adenoid and the pharyngeal tissue and in describing the racemose glands he says "The distribution of the racemose glands is an irregular one in the pharynx. Many are found along the posterior surface of the anterior pillars of the fauces, and their ducts are said to open posteriorly for the most part. Around the ducts of these glands are apt to be found small collections of lymphoid cells, and these make up some of the "granules" of the chronic granular pharyngitis. It seems likely that such "lymph nodes" are for the most part of inflammatory origin. There are, however, many of these lymph nodes in the fauces and on the posterior pharyngeal wall, to which one can trace no glandular affiliation. The glands of the pharynx have been described as lying with their acini against the muscle sheets or mingled with their fibers bundles."

While Barnes(14) diagrammetic section of the adenoid does not show any mucus glands, his text states that "in the capsule and at times in the fibrous trabeculae are mucus glands the ducts of which pass through the lymphoid tissue to the crypts or to the surface."

Grunwald's(15) Atlas does not show mucus glands in the capsule of the adenoid. A cleft in the capsule is shown as a pharyngeal bursa, cystoid cavities are shown where follicles have broken down.

Kelley(16) in the description of his technique says "My experience has been that adenoids removed with such precision as this instrument affords are quite well organized owing, no doubt, to the presence on their cut surface of a definite fibrous trabeculae descending into the lymphoid mass composed of reticular connective tissue containing countless leukocytes in its meshes, and scattered throughout are the germinal centers or oval rings of lymphocytes. The higher magnification shows more clearly the tunica propia or capsule on which the adenoid is developed, its mucus glands and blood vessels, together with the trabeculae forming the coarser framework of the lymphoid tissue. The capsular structure is seen to be so well marked that it must serve to show that the previous methods of adenoid removal were responsible for much of the seeming lack of organization found in this tissue."

I wish to acknowledge the valuable assistance given me by Dr. A. S. Rubnitz, in the preparation and study of my sections.

REFERENCES

1. Johnston, Dr. Richard H., "Animals of Otology." Vol. XVI. June 1907. Page 297.
2. Wright, Jonathan, "New York Medical Journal" 1895, Dec. 7th.
3. Figi, "Laryngoscope" Vol. 33. No. 1. Page 34. January 1923.
4. Cunningham, D. J., "Manual of Practical Anatomy" Edinburgh; Frowde, Hodder and Stroughton. 1921. Page 1033. Quoted by Figi.
5. Atterbury, Ruth Rand, "Bursa and Tonsillar Pharyngea; A Note on the Relations in the Embryo Calf." The Anatomical Record. Vol. 16, No. 4. June, 1919.
6. Kyle, Braden D., "Diseases of the Nose and Throat." (W. B. Saunders Company, 1914). Page 26.
7. Phillips, W. C., "Diseases of the Ear, Nose and Throat." (F. A. Davis Company, 1918). Page 661-667.
8. Thomson, St. Clair, "Diseases of the Nose and Throat." (D. Appleton and Company, 1912). Page 296.
9. Gruber, Josef, "Diseases of the Ear" (D. Appleton and Company 1891). Page 343.
10. Browne, Lennox, "The Throat and Nose and Their Diseases" (Bailliere, Tindall and Cox Company, 1899—London, Eng.) Page 418.
11. Ballenger, William Lincoln, "Diseases of the Nose, Throat and Ear" (Lea and Febiger, 1911). Page 332.
12. Wright and Smith, "Diseases of the Nose and Throat" (Lea and Febiger Company, 1914). Page 279.
13. Wright and Smith, "Diseases of the Nose and Throat" (Lea and Febiger, 1914). Page 281.
14. Barnes, Harry A., "The Tonsils" (C. V. Mosby Company, 2nd Edition, 1923).
15. Grunwald's "Atlas of Disease of Mouth, Pharynx and Nose" (Saunders Company, 1903—Plates 31 and 32).
16. Kelley, I. D., "Adenoid Removal by Direct Vision Adenotome"—Annals of Otology, Rhinology and Laryngology. December 1923. Pages 1054-1055-1056.
17. Latta, "Anatomical Record." Vol. XXIV. November 1922. Pages 233 and 245.

DISCUSSION

J. J. HOMPES, M. D., (Lincoln): The practical application to be made from the anatomical and histological facts presented by Dr. Lemere in this paper is considerable.

In the first place the form of the adenoid, being like two loaves lying side by side with the resultant deep dividing sulcus, gives one all the picture necessary for a possible focus of infection. If you add to this the underlying mucus membrane with its acinous glands we have an added harbor for acute and chronic infections.

Some of the older text books of acute infections of the adenoid as Thornwaldt's disease which was an acute follicular tonsillitis of Luschka's tonsil (the adenoid).

Acute and chronic infections of the adenoid are common. Such infections causing inflammatory reactions to nasal obstruction are the chief causes of otitis media and nasal accessory sinus disease in children.

From an operative standpoint: The rather sharp line of demarkation that the Doctor has shown to exist between the purely lymphoid membrane is the line where an operation for the removal of adenoids should stop.

The needlessly rough or ignorant attacks made on this tissue with adenoid curettes results in extensive scar formation. The mucus membrane being replaced by scar tissue gives rise to dryness with crust formation in later life which we recognize as atrophic pharyngitis. This chronic inflammation which extends to the ear and the nose is not curable and I trust that as a result of Dr. Lemere's clear presentation that operators in this field will bear in mind that the mucus membrane on which he has shown the adenoid to rest must not be removed. It is far better to run the risk of having to do a second operation than to cause an atrophic pharyngitis.

W. L. ROSS, M. D., (Omaha): I should like to ask if crypts of the adenoid do not drain downward into the throat?

DR. LEMERE (closing): Replying to the question asked by Dr. Ross as to the crypts of the adenoids, I will say as a rule we have no crypts. They are simply valleys. The crypts of the tonsils are round tubules. With the adenoid, they are valleys which open like the leaves of a book, into the throat, so that they drain downward and forward.

I want to emphasize what Dr. Hompes stated, which I have in my paper—that the removal of tonsils should be done by the Laforce way which cuts it cleanly. If we attempt to scrape it out with the adenoid curette, you can see how difficult, and how likely it would be to leave adhesions around the Eustachian tube in the throat. Some sharp instrument which cuts it cleanly to the capsule is best. Whether it is objectionable to remove these capsules with the adenoid is another question. I am rather inclined to think it would be better not to cut the whole capsule if we can avoid it. If we cut to the capsule without removing it, we would probably have a better functioning throat if the mucus glands were still functioning, instead of excising them.

SOME EXPERIMENTS IN FEEDING POTASSIUM IODIDE

The Iowa Agricultural Experiment Station at Ames, Iowa, has been doing extensive work in the administration of potassium iodide to livestock. Even tho no fetal athyrosis or hairlessness of new born pigs has been noted at the Station during the past 15 years, nor any sign of iodine deficiency detected, it appears that the swine (sus scrofa) were in need of iodine for additions of potassium iodide to the ration of young growing pigs in three different years increased their rate of growth some 10 per cent, as measured by live weight, and likewise increased their dimensional growth in heigth, length, and in leg circumference. The potassium iodide also increased the nutritive value of the feed nutrients ingested.

DIAGNOSIS AND TREATMENT OF DUCTLESS GLAND DISORDERS

Wm. Engelbach, M. D., St. Louis, Mo.

(Continued from November Number)

POSTERIOR LOBE PITUITARY INSUFFICIENCY

Posterior lobe pituitary insufficiency is a most important and frequent, yet the most commonly overlooked hypophyseal disorder. This type occurs particularly in the preadolescent age. We attribute 60 per cent of obesities in children between the ages of five and fifteen to posterior lobe pituitary insufficiency. In this event the significance of the age incidence of overweight is apparent. For instance, if, as is our contention, (1) 70 per cent of the infants at birth weighing more than 8 pounds are hypothyroidisms, (2) 60 per cent of the juvenile obesities are hypopituitarisms, and (3) hypogonadism does not produce adiposity before the age of twenty-eight or thirty, the age incidence certainly is significant as a diagnostic indicator.

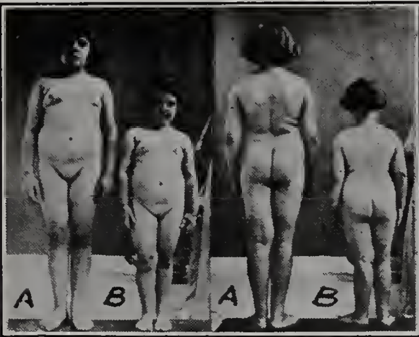


Figure 16

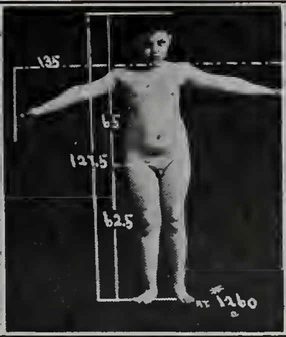


Figure 17

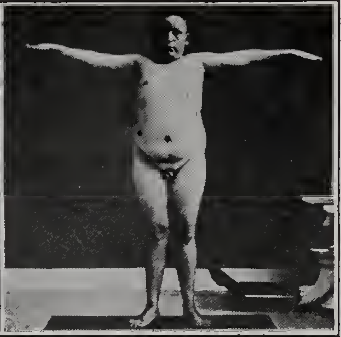


Figure 18

Fig. 16. Posterior lobe pituitary insufficiency (juvenile adiposity), six (A) and four (B) years old.
Fig. 17. Posterior lobe hypophyseal insufficiency (juvenile adiposity), aged six.
Fig. 18. Bilobar pituitary deficiency aged fourteen. Note the adiposity, in association with a hypoplasia of the genitalia.

Fig. 16 is an illustration of two girls respectively four and six years of age, whom the casual observer would describe merely as having a tendency to obesity. We believe that both of these girls have posterior lobe pituitary hypofunction, the effects of the hypodermic administration of extract of this lobe having increased our confidence in this diagnosis.

Fig. 17 is another typical case, a male aged six. There was nothing unusual about this boy except his increased weight. These pituitary individuals can be readily distinguished from thyroid deficiencies by their mental capacity. They are usually very bright, aggressive children, progressing rapidly through their studies and having few physical complaints. For this reason their overweight is given little consideration.

Fig. 18 is a hypopituitarism in a boy fourteen years old. You will note that he has a marked gonadal aplasia, the serious developmental finale occurring in these cases. The adiposity when in its incipiency before maturity should be a danger signal indicating treatment for the prevention of the subsequent complete aplasia of the genital tract complicating this glandular disorder.

Fig. 19 is a comparison of three males aged eighteen. B is an uncomplicated anterior lobe hypopituitarism; C, a mild bilobar insufficiency; and A, a pronounced bilobar insufficiency. All have a marked genital aplasia, but B has practically no adiposity, indicating a normal posterior lobe function, while C has the slight girdle adiposity of a beginning posterior lobe deficiency and A has a marked obesity, weighing over 260 pounds, presenting the syndrome of bilobar hypopituitarism (Frohlich's disease).

Fig. 20 illustrates the course of these posterior lobe insufficiencies in early adult life. At the age of six (A) there is no evidence of endocrine disorder, but in the same patient at eleven (B) there is a definite adiposity, suggestive of hypopituitarism. At eighteen, three years after the normal age of adolescence (C), there is presented a classical bilobar insufficiency (Frohlich's disease), demonstrating that adolescence does not greatly affect the endocrine function in these cases. The case shown serves to emphasize this point, as a great many physicians, as well as laymen, believe that overweight or extreme adiposity is naturally corrected at the age of maturity.

Fig. 21 shows the effect of treatment in a case at the age of eighteen, who had passed through the adolescent age without effect upon the genital development or the adiposity. You will note the marked result produced by pituitary treatment in this instance as to obesity, pubic hair growth, stature, intelligence of expression, etc.

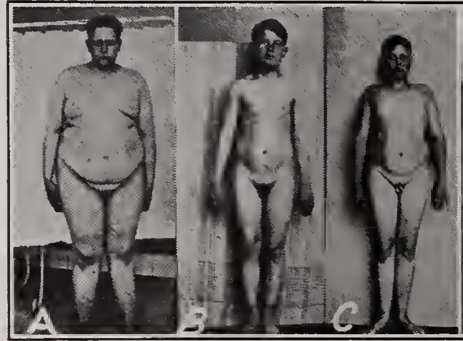


Figure 19

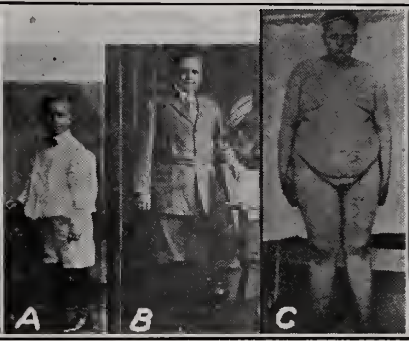


Figure 20

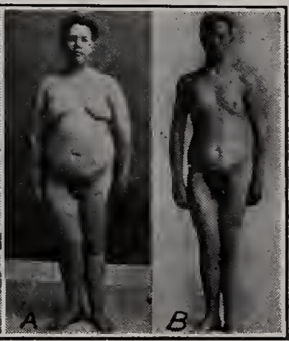


Figure 21

Fig. 19. Comparison of three cases of hypopituitarism, aged eighteen. The central figure (B) is an uncomplicated anterior lobe deficiency. At the right (C) is a bilobar involvement, showing a beginning adiposity (due to the posterior lobe) and a genital hypoplasia (an anterior lobe effect). At the left (A) is a bilobar hyposecretion, with marked signs of both lobes.

Fig. 20. Illustrating the onset and progress of the adiposity of a bilobar hypophyseal insufficiency.

Fig. 21. Bilobar hypopituitarism aged eighteen before (A) and after (B) treatment.

MACROGENITOSOMIA, OR PUBERTAS PRAECOX

In contrast with the aplasia of the genital tract, so prominent a feature of pituitary insufficiency, we present the following cases of macrogenitosomia, in our judgment probably due to hyperpinealism. There are three causes commonly ascribed to this condition: (1) pineal disorder; (2) suprarenal cortex disorder; and (3) primary gonadal dysfunction. The absence of hypertrichosis (abnormal bodily hair) does not accord with suprarenal cortex involvement or primary hypergonadism. The majority of them also have symptoms referable to focal cerebral lesion (epilepsy, mental retardation, etc.), favoring their classification with intracranial disease rather than with suprarenal cortex or gonadal disorder.

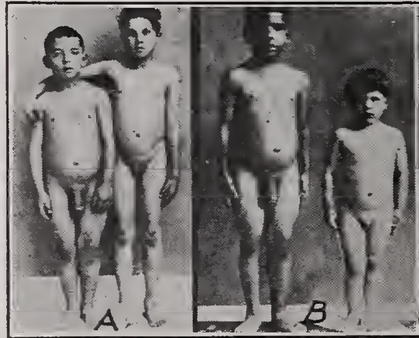


Figure 22

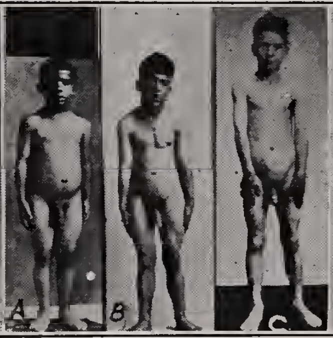


Figure 23

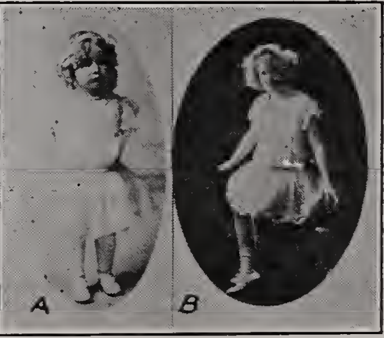


Figure 24

Fig. 22. Macrogenitosomia (pubertas praecox). (A) Comparison of a case aged four (left) with a normal boy thirteen years old. (B) Comparison of the same case (left) with a normal boy aged four.

Fig. 23. Macrogenitosomia. A, the same case as Fig. 22, shown with two similar cases, B, aged six, and C, aged eleven. (Fig. C is the case of Dr. Wm. McKim Marriott, Children's Hospital, St. Louis).

Fig. 24. Pubertas praecox in the female, at four (A) and fourteen (B) years of age.

Fig. 22 is a comparison of a macrogenitosomia four years old with a normal thirteen-year-old boy (A) and with a normal boy of the same age (B). Fig. 23 shows the same case in comparison with two others of this type, aged six and eleven respectively. You will note that all have the decided make-up of macrogenitosomia, but attention is directed to the fact that they do not have the hypertrichosis usually present in suprarenal cortex involvement or primary hypergenitalism.

Fig. 24 is a female of the same type as

Figs. 22 and 23. A represents this case at the age of four and B, at the age of fourteen. Regular menstrual periods occurred from the age of six months and at two years the flow was as profuse and regular as in the normal adult female. X-ray studies of the osseous system were of interest, at the age of fifteen showing the epiphyseal ends of the long bones closed, ten years before the normal age of complete fusion.

In contrast with the above type, Fig. 25 demonstrates a virilism, with a hypertrichosis of the face (mustache and beard), usually indicative of suprarenal cortex disorder. The marked genital dysfunction has a different basis than in the four cases shown above.

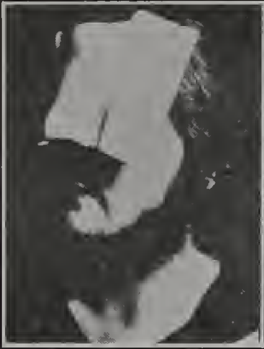


Figure 25

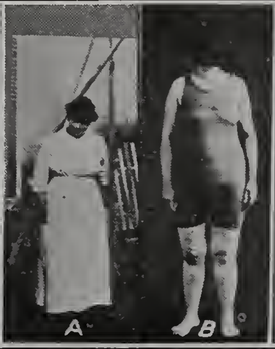


Figure 26*

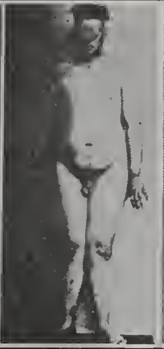


Figure 27

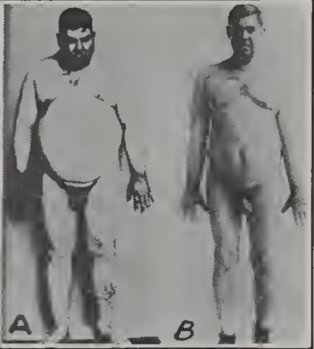


Figure 28

Fig. 25. Virilism, showing a classical facial hypertrichosis.
Fig. 26. Pituitary headache before (A) and after (B) treatment. (C) Chart showing the results of treatment in this case.
Fig. 27. Pituitary epilepsy.
Fig. 28. Pituitary hibernation before (A) and after (B) treatment.

PITUITARY HEADACHE, EPILEPSY, AND HIBERNATION

We wish to demonstrate three cases showing very marked nervous reactions resulting from disturbed pituitary function. The first is a pituitary headache (Fig. 26). A shows the case before treatment; B, after treatment; and C, a chart giving the effect of therapy upon the weight, measurements, and some of the important symptomatology. Fig. 27 is a pituitary epilepsy, a very rare disease. In over a thousand cases of pituitary involvement observed by us, less than 2 per cent had epilepsy. Pituitary or uncinate epilepsy, as is known, has a characteristic aura, a disturbance of the gustatory or of the olfactory sense. We have collected a number of cases having this peculiar aura, in association with other signs of pituitarism sufficient to implicate the hypophysis as the basis of this epilepsy. Provided the reaction to treatment is rather definite, a diagnosis of epilepsy due to hypophyseal disorder is made. Pituitary hibernation is a well-known condition described as pure pituitary disorder. We classify it as a pituitothyroidism, in which an initial hypopituitarism is later complicated by a secondary hypothyroidism. The prognosis in this condition is favorable. Of 16 cases collected by us,- 15 have reacted well to treatment. Fig. 28 is a pituitary hibernation before and after treatment. This patient was thirty-seven years old at the time of the onset of his condition. Within one year his somnolence became so pronounced that it was impossible to keep him awake long enough to answer questions.

Before leaving the subject of pituitary syndromes, or those conditions grouped by one school under pituitary disorders, we wish to present three cases of diabetes insipidus (Fig. 29). We have now collected 26 cases of diabetes insipidus, 50 per cent of which have reacted positively to pituitary treatment given hypodermically. A and C (Fig. 29) reacted definitely to treatment. You will note that both have many other markings of pituitarism. On the contrary, B had practically no reaction to pituitary therapy administered by any method.

---

*	June 6, 1917	April 25, 1918
Weight	238 pounds	185 pounds
Measurements:		
Bust	46 in. (117 cm.)	42 in. (107 cm.)
Neck	14 in. (36 cm.)	12½ in. (32 cm.)
Waist	38½ in. (98 cm.)	32 in. (81 cm.)
Hips	58½ in. (149 cm.)	44½ in. (113 cm.)
Arm (upper)	14 in. (36 cm.)	12 in. (30 cm.)

A comparison of the above shows that there is a loss of weight of 53 pounds and a marked diminution in all circumference measurements. The greatest is that about the hips and abdomen, which have decreased fourteen inches in circumference. At the last observation on May 26, 1918, the following notes were taken: "Greatly improved, periods regular, of four days' duration, normal amount of flow, absolutely painless for past six months; complete absence of headaches, nausea, vomiting, nervousness, mental confusion, etc."

GONADAL DISORDER
HYPOGONADISM

Stratz' table of individuals of normal proportions at various ages is shown in Fig. 30. You will note that at birth the lower measurement (symphysis to soles of feet) and the upper (symphysis to vertex) are in the ratio of 3 to 5. At the age of twenty-five, when ossification is complete, provided the influences governing growth and development are normal, the upper measurement equals the lower and the span equals the height. At birth the head makes up one-fourth of the body length and the eye line is somewhat lower than one-eighth of the body length. In the normal adult the head occupies one-eighth of the length of the body and the distance of the eyes from the vertex is one-sixteenth of the body length.

the early castrate of the same age (B) the inverse proportions exist, the lower measurement being longer than the upper, the span being longer than the height. You may also note the lack of hair growth in the early castrate as compared with the hypertrichosis of the pituitarism.

These types are shown in the female in Fig. 32. comparing an anterior lobe hypopituitarism, or the Lorain-Levi type (A), with a hypogonadism (B) of approximately the same age. Both of these women had amenorrhea and their developmental proportions, though converse, at once indicate its cause. In A it is due to anterior lobe pituitary hyposecretion, while in B it is due to primary decreased ovarian function.

Duplicates of these two types are shown in Fig. 33. B (aged fourteen) is a typical anterior lobe pituitary deficiency (Lorain-Levi type) and A (aged thirteen), a primary ovarian hyposecretion. In the Lorain-Levi types (Figs. 32 and 33) there is a hypogonadism secondary to the anterior lobe hypopituitarism. In both the pituitary and the ovarian insufficiency there is late epiphyseal fusion. The long bones continue to grow as long as their epiphyseal ends remain open, provided the hormones from the anterior lobe pituitary and the thyroid are supplied in the proper amounts. In the Lorain-Levi type, however, as the anterior pituitary hormone is insufficient, the long bones do not develop, even with the epiphyses unfused. In primary hypogonadism the long bones are abnormally lengthened because the epiphyses are late in closing, allowing the normal action of other hormones of osseous

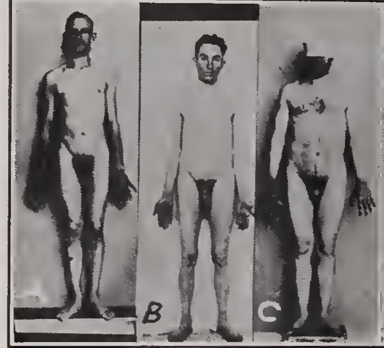


Figure 29

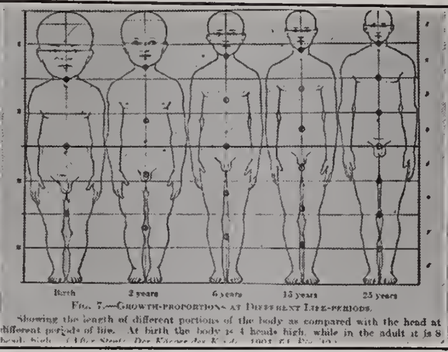

Birth
2 years
6 years
15 years
25 years
Fig. 7.—Growth-proportions at Different Life-periods.
Showing the length of different portions of the body as compared with the head at different periods of life. At birth the body is 4 heads high, while in the adult it is 8

Figure 30

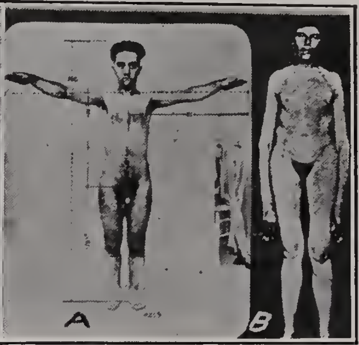


Figure 31

Fig. 29. Three cases of diabetes insipidus. A and C reacted well to pituitary therapy, whereas in B treatment was ineffective.
Fig. 30. Table of Stratz giving normal proportions at various ages.
Fig. 31. Comparison at the age of twenty-five of a pituitary tumor (A) and a hypogonadism due to castration at the age of five (B).

Comparison of the normal with the endocrine proportions is important in the pituitary and gonadal types. In nearly all pituitarisms there is a tendency to retain the infantile proportions (a longer upper measurement than lower), whereas the opposite is true in all insufficiencies of the generative organs. In the latter, because of the overgrowth of the long bones, there results a lower measurement much longer than the upper and a span longer than the height. This is well illustrated in Fig. 31, a comparison of a hypopituitarism due to pituitary tumor (A), with many classical signs of pituitarism, and a hypogonadism due to castration at the age of five (B). Both are aged twenty-five. In the pituitarism (A) the upper measurement is 35½ inches (90 centimeters) and the lower, 30 inches (76 centimeters), the span being 64 inches (162 centimeters). In growth (anterior lobe pituitary and thyroid) to produce this overgrowth. This affords an explanation of the difference in make-up of these two types, both of which have delayed closure of the epiphyses.

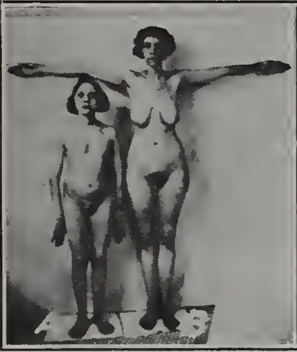


Figure 32

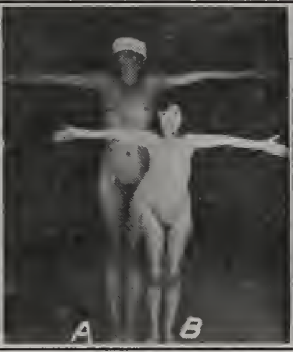


Figure 33

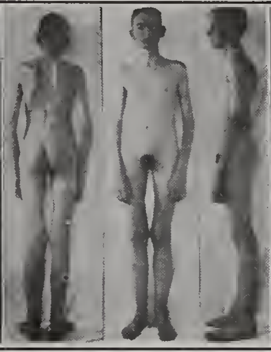


Figure 34

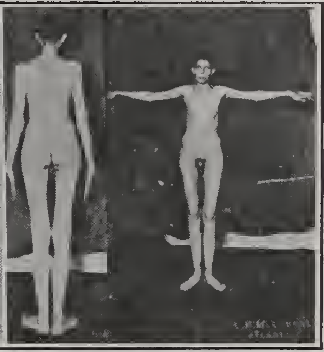


Figure 35

Fig. 32. Comparison of the Lorain-Levi type (A) with a complete hypogonadism (B), aged twenty-one, both having a complete amenorrhea.
Fig. 33. Comparison of a gonadal insufficiency (A) with an anterior lobe hypopituitarism (B), aged thirteen and fourteen respectively.
Fig. 34. Complete hypogonadism at the age of eighteen.
Fig. 35. Complete hypogonadism at the age of twenty-four.

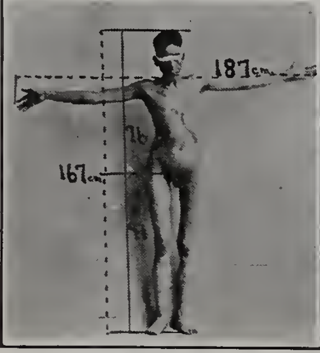


Figure 36

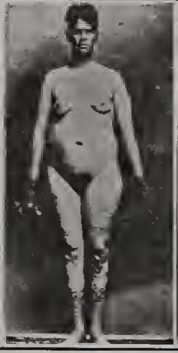


Figure 37

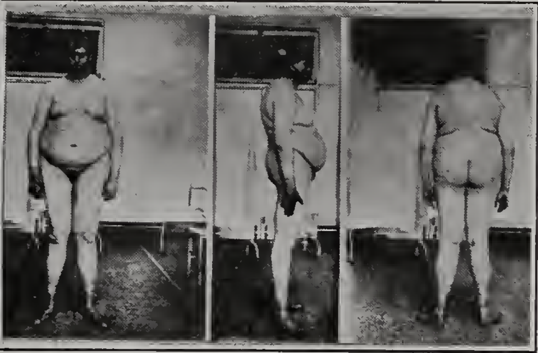


Figure 38

Fig. 36. Complete hypogonadism at the age of thirty-one.
Fig. 37. Complete hypogonadism at the age of thirty-six. Note the advent of gonadal adiposity, absent in the previous cases younger than this age.
Fig. 38. Complete hypogonadism at the age of forty-four.

Figs. 34, 35 and 36 are pronounced hypogonadisms, aged eighteen, twenty-four and thirty-one respectively. You will note that all have the characteristic disproportion, genital aplasia, infantile facies, and early absence of obesity. In contrast is shown an obese hypogonadism, in a male aged thirty-six (Fig. 37), demonstrating the adiposity occurring in male hypogonadism after the age of thirty-two to thirty-four. He has a mammary, mons, and trochanteric adiposity, absent in cases younger than this age. We have concluded from our observations of gonadal dysfunction and castrates that adiposity due to insufficiency of the generative organs in the male does not occur earlier than the age of thirty-two, nor in the female earlier than the age of twenty-eight, although this is not in accord with the usual teaching. If true, the age incidence differentiates adiposity occurring in the early adult age for at this age it rarely, if ever, arises from hypogonadism or hypothyroidism. Adiposity initiated in the late adult age, however. might be due to insufficiency of the gonads, thyroid, hypophysis, or various combinations of these glands.

Fig. 38 is a hypogonadism aged forty-four. This case has the adipose deposition, feminine genu valgum, absence of hair growth, etc., as shown in the previous illustration (Fig. 37).

FEMALE HYPOGONADISM OR EUNUCHOIDISM

In the female the proportions, adiposity, hair growth, etc., are important diagnostic signs, as the development of the generative organs is not so objective as in the male. Fig. 39 is a primary gonadal insufficiency in a female twenty-five years of age who had a complete amenorrhea. It may be noted that she has the gonadal disproportions, absence of adiposity and of hair growth, as demonstrated in the pre-adult male.

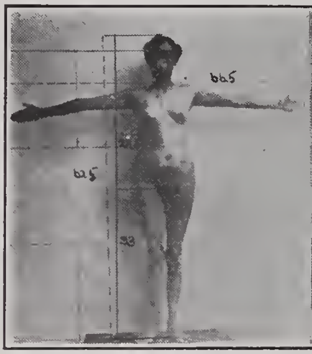


Figure 39

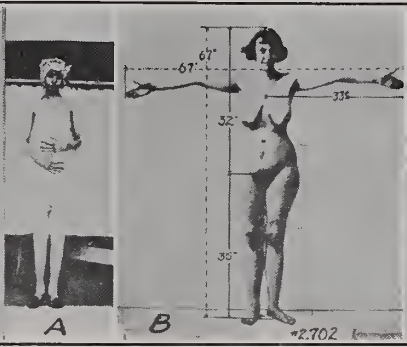


Figure 40

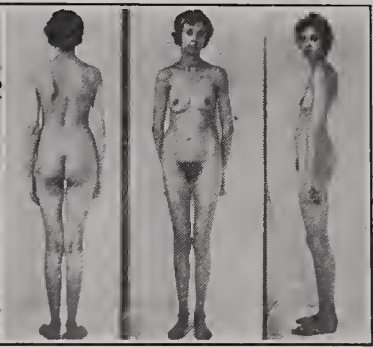


Figure 41

Fig. 39. Complete hypogonadism in the female, aged twenty-five.
Fig. 40. Preadult hypogonadism before (A) and after (B) endocrine treatment.
Fig. 41. Eunuchoidism (partial gonadal insufficiency).

Fig. 40 illustrates the effect of treatment in a complete hypogonadism, showing the patient before (A) and after (B) treatment. This patient had persistent, continuous vomiting for five years, during which time she lost 60 pounds in weight. Two operations (removal of the appendix and exploratory laparotomy) were undergone, without evidence of the cause of her nausea and vomiting. She was then placed upon corpus luteum, with consequent relief of all symptoms except the amenorrhea, which had been complete for more than a year preceding her last operation. The nausea and vomiting, headaches, and other symptoms were completely controlled by various ovarian substances during five years' subsequent observation.

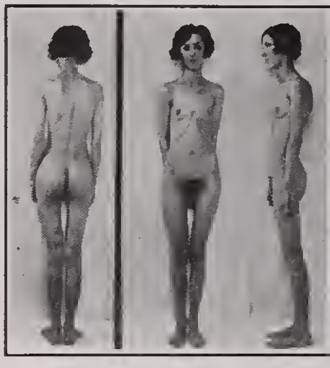


Figure 42

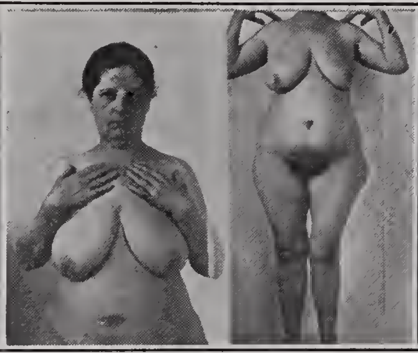


Figure 43

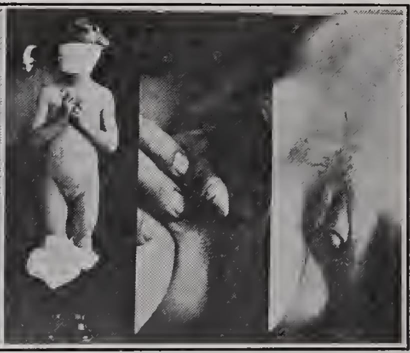


Figure 44

Fig. 42. Eunuchoidism (partial gonadal insufficiency).
Fig. 43. Late castrate, illustrating the trochanteric adiposity.
Fig. 44. Pseudohermaphrodite, with a hypotrichosis (courtesy of Dr. A. G. Bosler, Chicago).

Two illustrative cases of eunuchoidism are shown in Figs. 41 and 42. These eunuchoid girls are among the most common endocrine disorders presented for treatment. A composite history of female eunuchoidism is somewhat as follows: They usually mature at a late age, rarely before fifteen. They are fairly free from symptoms until the age of sixteen or seventeen, when the menses begin to decrease in amount and duration, although remaining regular. With this diminished amount and duration of menstrual flow, there is usually a coincident anorexia, which frequently develops into a severe nausea and then a more or less persistent vomiting, with loss of weight, weakness, and subsequent emaciation. We have cases on record who had had this continued vomiting due purely to endocrine disorder for five to eight years. That of longest duration (fourteen years) was a hypogonadism secondary to a suprarenal cortex disorder. They are treated for primary gastric or intestinal disease and frequently are operated upon for appendicitis, gastric ulcer, etc., without apparent effect upon the symptomatology. They then may come under the observation of a neurologist or a psychiatrist, who usually diagnoses the condition as cyclic or nervous vomiting. These cases have the classical phthisical chest and enteroptotic abdomen, described many years ago by Glenard. The heart is vertical in position and the abdominal viscera are in a marked state of ptosis (if this diagnosis may be accepted in this type of abdomen). They are subject to secondary infection of the respiratory tract, for which reason many of them early acquire tuberculosis. Phthisiologists are becoming interested in the make-up of the individual as related to infection. This study is also being applied by George Draper and others to conditions such as gastric ulcer, gall-bladder disease, hypertension, pernicious anemia, and nervous diseases. The gastro-intestinal symptoms so often present in these cases must be due to an autonomic nervous system effect. Through the sympathetic nervous system, the motility and secretion of the gastro-intestinal tract are changed.

Fig. 43 is a very good illustration of the trochanteric adiposity which develops in hypogonadism. This is a late castrate, with an exquisite localization of adiposity about the trochanteric region. As stated, it rarely occurs before the age of twenty-eight to thirty in the female, or before thirty-two to thirty-four in the male.

In contrast with the hypotrichosis (absence of hair growth) and the genital hypoplasia in these cases, Figs. 25 and 44 are shown. Fig. 25 has a pronounced facial hypertrichosis, with a beard and mustache, as seen in the virilism of a suprarenal cortex disorder. Fig. 44 is a female pseudohermaphrodite, having a hyperplastic development of the external genitalia, without an overgrowth of hair on the body. This would indicate that in this individual case the hypertrophy of the external genitalia is not due to the suprarenal cortex, but probably to a hyperpinealism, which is productive of genital overdevelopment without associated hypertrichosis.

TREATMENT

With regard to medication, we believe that ductless gland preparations, with the exception of thyroid substance, are rarely, if ever, efficacious when given orally. In most hypothyroidisms marked results are obtained from the administration of desiccated thyroid gland by mouth. We have had to resort to the hypodermic preparation (thyroxin) in relatively few cases, in which, for some reason, the desiccated thyroid was not properly absorbed or assimilated. The measure for the tolerant dosage of thyroid in congenital hypothyroidism has been (1) the rectal temperature and (2) the weight. We are now giving with better results much larger doses of thyroid preparation to infants and children than we administered a few years ago. We frequently give as much as 2 or 3 grains (0.13-0.195 gm.) of desiccated thyroid substance daily to a child one year old without noting signs of thyroid intoxication. A rise in rectal temperature is one of the first signs of thyroid intoxication in children and if it remains below 100.5° F., with a normal or an increased weight, this is proof that the dosage is not too high and may be gradually increased until such effect is produced. Should the rectal temperature rise above 100.5% F., the thyroid medication should be withdrawn for several days in order to determine other possible cause, as an intercurrent infection, for this temperature. The amount of desiccated thyroid or of thyroxin to be given to an adult hypothyroidism is best gauged by the basal metabolic rate and the clinical effects.

Preparations from the anterior lobe pituitary gland or the ovary can be given in very large dosage intramuscularly or intravenously without untoward results. The only guides to their effects are clinical, such as menstrual, gastro-intestinal, and nervous. A peculiar serum reaction may result in cases who have taken a considerable amount of this medication, but this is a rare occurrence. A dosage of 15-30 minims (1-2 c. c.) of either of these is usually given intramuscularly daily.

The posterior lobe pituitary extract must be measured by its effect upon the involuntary or unstriped muscle tissue. Several years ago we described an "intestinal reaction" as the measure for the tolerant dosage of posterior lobe pituitary gland intramuscularly. This reaction consists of intestinal cramping and defecation within ten to fifteen minutes following the hypodermic injection. There are two other reactions resulting from the hypodermic use of posterior lobe extract. One we have termed the "vascular reaction," consisting of a pallor of the skin and mucous membrane occurring a very few minutes after the injection and in the tolerant dose disappearing within a half to one hour. A third reaction we have described as the "general reaction," of which the signs are tachycardia, emotionalism, and syncope. This is an untoward reaction, rarely produced by a dosage less than that causing the "intestinal reaction". It should be avoided by not increasing the dosage beyond that producing the "intestinal reaction."

We have been unable to discover thus far any male gonadal preparation productive of definite therapeutic effects.

The use of adrenalin is measured by its general effect, as tachycardia, tremor, etc. Ordinarily 7-10 minims (0.42-0.6 c. c.) is a maximum dosage for the adult. Such a dose usually has a marked influence upon the autonomic nervous system, with its consequent effect upon the heart and voluntary muscles.

The dosage of Insulin is measured by the amount of glycosuria and hyperglycemia, and the dosage of parathyroid hormone (recently discovered by Collip), by the effect upon the blood calcium.

URINARY ANTISEPSIS — THE CLINICAL APPLICATION OF EXPERIMENTAL DATA*

Edwin Davis, M. D., F. A. C. S., Omaha, Nebr.

Each of us is daily confronted with the problem of urinary antisepsis. This statement applies particularly to those of us doing urological work exclusively, but includes also each and every one engaged in general practice. Cases of urinary infection, characterized chiefly by frequent and painful urination, and by the presence of pus or bacteria, or both, in the freshly voided urine, are observed very frequently, in either sex, at any age. Those instances of urinary infection not frankly traumatic in origin, or due to faulty instrumentation, we are accustomed to explain on an hematogenous basis by reason of an associated extra-urinary focal infection or an acute infectious disease. We have been able to establish a fairly definite relationship between urinary infections and certain predisposing or accessary causes, chief among which are imperfect urinary drainage, stone, tumor, foreign body and trauma. Our knowledge, however, as to the exact etiology and mechanism of urinary infections remains rather meagre. And when we come to a consideration of the treatment of these infections, we encounter a problem even more baffling. At the present time there is no known drug which may be given by mouth and which may be depended upon to prevent the growth and development of bacteria within the urinary tract. Yet there is reason to hope that such a drug may be discovered or synthesized. In fact, laboratory evidence accumulated during the past few years goes to show that there are at least three chemical compounds, each of which comes very close to fulfilling the requirements essential to the ideal internal urinary antiseptic.

In early experimental work upon this subject(1), the ideal internal urinary antiseptic was defined as a chemically stable compound, comparatively non-toxic, and non-irritating to the lower urinary tract, which is eliminated, unchanged, by the kidney, and which exerts a definite antiseptic action in high dilution in urine of any reaction. The three compounds meeting these experimental requirements are chlor-mercury fluorescein(2), acriflavine(3) and hexyl resorcinol(4). There is laboratory evidence to the effect that either or these compounds administered to a normal individual will cause the secretion of urine which will kill the colon bacillus in a test tube. There is further evidence indicating that mercurochrome(5), although eliminated by the kidney in relatively small percentage as compared with the other three, will also cause the secretion of antiseptic urine by the normal individual. Yet the clinical fitness of each of these four drugs awaits conclusive demonstration. In other words, there is a distinction between the fulfillment of ideal experimental requirements and practical clinical application. This is a disappointment, but a fact. For example, the urine of a normal individual, obtained following the administration of one of the above compounds, placed in a test-tube and inoculated with colon bacilli or staphylococci, will become sterile during incubation. Yet the same dose of the same drug, administered at frequent intervals over a period of weeks to an individual with a chronic bacteriuria, is likely to have no appreciable effect upon the number of bacteria in the freshly voided urine, or upon the clinical symptoms. This indicates clearly that the test-tube experiment is not exactly duplicated within the living human urinary tract. As will be outlined below, there are other factors which enter in. We must, therefore, further modify our definition of the ideal internal urinary antiseptic. We must distinguish between the experimental and the clinical internal urinary antiseptic, and define the latter as that drug which not only possesses the above-listed theoretical requirements, but which also is of distinct, proven clinical value.

---

*From the Department of Urology, University of Nebraska College of Medicine. Read before the Southern Minnesota Medical Association, Owatonna, Minn., May, 1925.

To attempt to conclusively prove the clinical value of given "experimental" urinary antiseptic is to enter into a problem of far greater complexity than the original laboratory investigation proving the antiseptic properties and the "renal affinity" of that same drug. The treatment of each patient is an individual clinical experiment, which is necessarily lacking in the "control" which we are able to apply to laboratory experiments. Among the many confusing variable factors which enter into each clinical trial, probably the chief cause for inaccuracy in interpretation of results is the spontaneous or unexplained day-to-day variation, which is frequently observed in the pus and bacterial content of the urine of a given individual. That urine which is cloudy and infected today may be clear and sparkling tomorrow, for no known reason. Coincident with these variations in the urine we are accustomed to see alternating periods of exacerbation and spontaneous improvement in the clinical symptoms. In these cases there is, therefore, every opportunity for the post hoc, ergo propter hoc fallacy to enter in.

Inaccuracies in interpretation of clinical results also creep in through the improper selection of cases, and through failure to eliminate, by thorough investigation, the so-called accessary or predisposing causes of urinary infection. That a given case of uninvestigated pyuria or bacteriuria should either improve or fail to improve, following the administration of a given drug, is not evidence of particular value either for or against the efficiency of that drug. Numerous so-called accessary or predisposing causes of urinary infection must first be eliminated. There are certain well defined and well recognized, "intra-urinary," predisposing factors, which may be grouped under the main headings, urinary retention, calculus, new growth and tuberculosis. The folly of attempting the cure by drug therapy of a urinary infection which is primarily dependent upon one of the above-named mechanical factors, is apparent.

Concerning the systemic or "extra-urinary" predisposing causes of urinary infection, our knowledge is relatively scant and unsatisfactory. There are those cases of pyuria or bacteriuria, occurring during the course of acute infectious diseases; and there is that large group of cases in which it is considered that chronic focal local infection plays a role. Whether our predisposing or underlying cause of infection be intra-urinary or systemic, to disregard this primary cause, and to attempt a cure by merely rendering the urine antiseptic, is obviously ridiculous. Therefore, if accurate information is to be obtained, the essential preliminaries in selecting cases suitable for internal urinary therapy are (a) complete general physical examination and (b) complete urological examination. It should be further noted that favorable results cannot be expected in far-advanced cases, as, for example, bilateral pyelonephritis, of long duration, with extensive destruction of renal tissue and lowering of renal function.

In view of the numerous obstacles in the way of obtaining accurate and reliable clinical data, it may, therefore, be stated that the clinical efficiency of a given "experimental" urinary antiseptic must be determined by the average opinion of a number of competent, unprejudiced observers, each of whom has accurately tabulated results in a series of cases sufficiently large to eliminate the post hoc, propter hoc fallacy. As yet no "internal urinary antiseptic" has stood this test.

We are not here primarily interested in a consideration of the value of the ordinary text-book "urinary antiseptics," among which may be mentioned hexamethylenamin, methylene blue, salol, oil of sandalwood, salicylic, boric and benzoic acids. Of these, hexamethylenamin is of some clinical value, but has its very definite and recognized limitations. Certainly, none of the others has solved the clinical problem of infected urine. It is the purpose of this paper to consider briefly the clinical limitations of, and the indications for, the four above-listed "experimental" urinary antiseptics, in order that we may know what facts of practical clinical value have been brought to us by laboratory work upon this subject. To repeat, these four compounds are (1) chlor-mercury fluorescein, (2) acriflavine, (3) mercurochrome, and (4) hexyl resorcinol.

CHLOR-MERCURY FLUORESCEIN

This compound was synthesized as long ago as 1918 by E. C. White at the Brady Urological Institute in the course of an investigation relative to the antiseptic properties and the renal excretion of compounds related to phenol-sulphonephthalein (Davis, White and Rosen(2)). It was shown that this organic compound very nearly approaches the experimental ideal, in that the intravenous administration of a single minute dose (5 mgm) to dogs or rabbits will cause the secretion of antiseptic urine for a definite period of time (approximately 5 hours). In man, antiseptic urine was obtained following a single dose of 10 mgm. In these experiments the antiseptic value of the samples of urine obtained following drug administration was established beyond question by incubation following inoculation with colon bacilli and staphylococci, and by comparison with control samples of urine previously obtained and similarly treated. The appearance time of this drug in the urine after intravenous administration is even more rapid than that of phenolsulphonephthalein. Its toxicity has been carefully worked out with dogs and rabbits, the antisepsis-producing dose and the lethel dose (in dogs) having the ratio of one to forty. Chlor-mercury fluorescein, however, has never received a thorough clinical trial, chiefly by reason of the question of renal injury resulting from its mercury content, and partly because this investigation was interrupted by our entrance into the war. Recently, the wide-spread clinical use of large intravenous doses of mercurochrome without evidence of lasting ill effect, has afforded justification for undertaking a further clinical trial of chlor-mercury fluorescein. In this connection, attention should be directed to the rapid and abundant renal elimination of chlor-mercury fluorescein, in contrast with the very small fraction of mercurochrome which appears in the urine.

ACRIFLAVINE

A continued investigation of the antiseptic properties and the renal excretion of compounds related to phenolsulphonephthalein, and of a large number of anilin dyes(6), (a total of more than 400 compounds) led to the discovery of remarkable properties possessed by acriflavine. This drug, in a dilution of 1-100,000 in alkaline (pH 7.4) urine, in a test tube, inhibits the development of the colon bacillus or the staphylococcus. Administered intravenously or orally, to animals or man, it rapidly appears in the urine, and is excreted in large volume. The (alkaline) urine of a normal man, obtained four hours after the oral administration of a minute dose (0.05 gram) of acriflavine, becomes sterile within eight hours after inoculation with colon bacilli. Since half of this dose (0.025 gram) has been administered daily to rabbits for a period of thirty days without ill effect, it is clear that acriflavine fulfils the experimental requirements and gives brilliant promise of clinical value. Subsequent clinical trial, however, has borne out this promise only in small measure, and has served to emphasize the distinction between the experimental and the clinical urinary antiseptic. A published report(7) of the clinical value of acriflavine administered orally to patients with urinary infections was summarized as follows:

> 1. A large proportion of the patients with acute urinary infections have shown a prompt improvement, characterized by a drop in temperature, a disappearance of bladder symptoms, a macroscopic clearing of the urine and a disappearance of bacteria from the urine. Relapse in these cases have been the exception.
>
> 2. Chronic urinary infections have not readily responded. Improvement was noted in only 60 per cent of cases, and in most of these the pus and bacteria reappeared in the urine after discontinuing the treatment.
>
> 3. Acriflavine administered orally to patients with acute anterior gonorrheal urethritis is not a dependable prophylactic for preventing the extension of the infection to the posterior urethra.
>
> 4. Acriflavine administered orally is of benefit in acute posterior gonorrheal urethritis in lessening the duration and the severity of the acute symptoms.
>
> 5. Mild catharsis or slight nausea was observed in approximately 30 per cent of the patients. This was due in part to the bicarbonate, since in some instances these symptoms preceded the dye administration. In 5 per cent of the patients vomiting and diarrhea were such as to contraindicate the use of the drug. No further ill effects have been noted.
>
> 6. The indiscriminate use of acriflavine by mouth, in unselected cases, and without regard to the elimination of the "accessary" causes of urinary infection is distinctly inadvisable.

MERCUROCHROME

This compound also was synthesized by White in the Brady Urological Institute in the course of the continuation of the investigations outlined above. Following the original publication by Young, White and Swartz(5), describing its antiseptic properties, and recommending its use chiefly as a local instillation into the urethra and bladder, mercurochrome has rapidly come to be widely used as a local antiseptic in the various specialties. More recently there has developed a country-wide tendency toward the intravenous administration of mercurochrome in diverse varieties of sepsis. Unfortunately, this use of mercurochrome has not been limited to institutions where there has been opportunity for accurate observation and control, but has been by anybody, anywhere, and will probably result in reflecting discredit upon the drug. On the other hand, the highly commendable investigations by Young and his co-workers at the Brady Urological Institute, including exhaustive and painstaking studies of a large series of case reports, collected from various observers and accurately tabulated without prejudice, leave no doubt in the minds of the ultra-conservative that in this drug, administered intravenously, we have a valuable therapeutic agent in selected cases of sepsis. In this paper, however, we are primarily interested in the control of urinary infections. Young(8) has also reported improvement in urinary infections following the intravenous administration of mercurochrome, for which there is some experimental basis in the work of Hill and Colston(9), indicating a bacteriostatic action in the urine of normal rabbits following the intravenous administration of mercurochrome. Only a very small fraction, however, of mercurochrome given intravenously or by mouth appears in the urine, and for this reason mercurochrome would not seem to be as well adapted for the specific purpose of internal urinary antisepsis as is chlor-mercury fluorescein. Isolated instances of clinical improvement of urinary infections have been cited, following the internal use of mercurochrome, yet there has appeared no comprehensive clinical report, conclusively establishing the value of mercurochrome for this purpose.

In the form of a local application, however, mercurochrome is of established and proven value, and for this reason, if for no other, has made for itself a permanent place in our list of useful drugs. As applied in practical urology, mercurochrome is particularly useful as a local instillation into the posterior urethra, the bladder or the renal pelvis. There is a type of cystitis frequently observed in women, characterized by recurrent attacks of frequent urination, with urethral pain and burning, and by the presence of pus cells and colon bacilli in the urine. This clinical picture is frequently observed in general practice. It is in this type of infection that mercurochrome, in the form of daily instillations (10 cc of 0.5% to 1%) affords prompt and almost miraculous relief from symptoms. In this connection it should be noted that those cases failing to respond promptly to local treatment deserve complete urological investigation, in order to eliminate the so-called predisposing or accessary causes of chronic bladder symptoms, such as retained urine, stone, tumor, tuberculosis, or renal infection.

Mercurochrome is also a valuable drug in the treatment of chronic prostatitis, used as an instillation into the posterior urethra following massage. In this connection attention should be directed to the penetrating properties possessed by this drug.

HEXYL RESORCINOL

Through the work of Leonard(4) attention has recently been directed to hexyl resorcinol, synthesized by Treat B. Johnson of Yale. Leonard's experimental reports indicate remarkable properties for compounds of this series, in that as the number of carbon atoms in the alkyl side chain is increased there is a corresponding increase in antiseptic value (up to 6 carbon atoms, hexyl resorcinol), and at the same time a decrease in toxicity. Phenol coefficient determinations for hexyl resorcinol have averaged 46. Dissolved in either acid or alkaline urine, this compound has been shown to kill colon bacilli in a dilution of 1-10,000 and staphylococci in 1-50,000. Rabbits tolerate a daily dosage of 0.5 gram indefinitely. Leonard has shown that hexyl resorcinol, administered to normal rabbits, dogs and men, appears in the urine, and there exerts an antiseptic action, thus presenting a fourth compound possessing properties essential to the experimental internal urinary antiseptic. At the present time, sufficient clinical data has not accumulated to prove or disprove the clinical value of hexyl resorcinol.

CONCLUSIONS

1. There is no known "cure all" for infections of the urinary tract. In other words, the ideal internal urinary antiseptic, of proven clinical efficiency, does not exist.

2. Drugs with laboratory findings such as to indicate a theoretical clinical value, and which will cause the secretion of the antisep-

tic urine by normal human individuals are:

(a) Chlor-mercury fluorescein, which has not as yet received a thorough clinical trial.

(b) Acriflavine, which is of distinct clinical value in acute urinary infections, but which gives results in chronic infections which are inconstant, and not permanent. Furthermore chemically pure acriflavine is obtained with difficulty, and gastro-intestinal symptoms are not infrequent.

(c) Mercurochrome, which seems to have given good results in some cases, but which is not dependable. Furthermore, there are severe reactions associated with the intravenous administration of mercurochrome. It is excreted in the urine only in small percentage. Mercurochrome is of definite and proven value in the form of local instillations into the bladder or posterior urethra.

(d) Hexyl resorcinol, which is of splendid experimental promise, but which awaits clinical confirmation.

3. Promiscuous medication with so-called urinary antiseptics without painstaking investigation to eliminate mechanical or systemic causes of infection is distinctly contraindicated.

4. The frequent observation of spontaneous and seemingly causeless exacerbations and remissions in urinary infections, with corresponding variations in the pus and bacterial content of the urine, should prevent hasty conclusions as to the clinical value of a given urinary antiseptic.

5. In this field of endeavor, there is cause for optimism rather than pessimism, for the reason that the greatest obstacle has been surpassed. It has been conclusively demonstrated, and confirmed by different observers, that there are several chemical compounds which may be passed through the gastro-intestinal tract, the blood stream and the kidney of normal human individuals, rendering the urine an unfit culture medium for micro-organisms, and in no way injuring the body. It has further been shown that in selected cases one or another of these drugs may exert a curative effect upon inflammatory processes in the urinary tract. In this respect there has been a step of progress made.

REFERENCES:

1. Davis, Edwin: Urinary Antisepsis — A Study of the Antiseptic Properties and the Renal Excretion of Compounds Related to Phenolsulphonephthalein: Preliminary Report, Jour. A. M. A., 1918, 70, 581.

2. Davis, Edwin, White, Edwin C. and Rosen, Robert: Urinary Antisepsis — The Secretion of Antiseptic Urine Following the Intravenous Administration of an Organo-Mercury Phthalein Derivative. Jour. of Urol., 1918, 2, 277.

3. Davis, Edwin and Beck, Gerald H.: Urinary Antisepsis — The Secretion of Antiseptic Urine by Man Following the Oral Administration of Proflavine and Acriflavine — Preliminary Report, Jour. Urol., 1921, 5, 215.

4. Leonard, Veader: Secretion of Bactericidal Urine and Disinfection of the Urinary Tract — Following Oral Administration of Certain Alkyl Derivatives of Resorcinol. Jour. A. M. A., 1924, 83, 2005.

5. Young, H. H., White, E. C., and Swartz, E. O.: A New Germicide for Use in the Urinary Tract: "Mercurochrome — 220": Preliminary Report of Experimental and Clinical Studies. Jour. A. M. A., 1919, 73, 1483.

6. Davis, Edwin: Urinary Antisepsis — A Study of the Antiseptic Properties and the Renal Excretion of 204 Anilin Dyes. Am. Jour. Med. Sc., 1921, 161, 251.

7. Davis, Edwin: Urinary Antisepsis — Clinical Results Following the Oral Administration of Acriflavine, Jour. of Urol., 1924, 11, 29.

8. Young, H. H.: Urinary Antiseptics. Jour. Urol., 1924, 11, 19.

9. Hill, J. H. and Colston, J. A. C.: A Note on the Bacteriostatic Action of Urine After the Intravenous Administration of Mercurochrome to Normal Rabbits. Bull. J. H. Hosp. 1923, 34, 220.

SCHIZOPHRENIA — TRANSPLANTATION OF OVARIES

In a large number of cases of schizophrenia (dementia praecox) there is hypoplasia and decrease in function of the genital system. L. Fraenkel for instance was able to demonstrate very serious changes of the genital organs in 72% of 176 patients. Similar conditions have been observed by a number of other investigators; quite recently Potzl and Wagner ("Ars Medici" 1924 p. 203) reported on changes in the ovaries of patients suffering from dementia praecox, which imply a retardation in the involution of the corpora lutea. Sippel (Univ. Women's Clinic, Berlin) tried a transplantation of ovaries with 6 female patients suffering from dementia praecox, from the lunatic asylum in Dalldorf nr. Berlin. Slices of human ovaries which had been procured at operations on other patients, were introduced into pockets in the muscle under the abdominal fascia, while still warm from the body; they healed in without reaction. In 3 fresh cases which had presented the aspect of a slight degree of hypogenitalism, a strikingly good effect on the mental disturbance was observed; the result has now persisted for 8 months. (Klin. W. No. 9, 1925).

5. 1 gram of carbohydrate........4 calories
1 gram of protein.......................4 calories
1 gram of fat...........................9 calories

With these points in mind let us consider a hypothetical case. Suppose we have a patient presenting mild symptoms of diabetes, who on a somewhat limited diet has considerable sugar in the urine. This patient is put on a diet of known values, which is somewhat similar to the diet he has been on, and on which he would be expected to have some sugar in the urine. Suppose this patient weighs 60 K.

Trial diet	Available carbohydrates	Calories
C-60	60	240
P-60	36	240
F-120		1080
	96	1560

Urine 1500 c. c.
Per cent sugar 1
Total Sugar.............................15
—
Sugar tolerance.......................81

Knowing this patient's tolerance, let us balance his diet so that it will be adequate in caloric value and protein, have a proper fat—carbohydrate ratio, and have an available carbohydrate value which is less than his sugar tolerance.

	Available Carbohydrates	Calories
C-40	40	160
P-60x.66=39. Make 50	30	200
F-130		
	70	360
		1500
		360
		1140÷9=130

C-F=70-130

The diabetes in this patient should be controlled by dietetic measures alone.

Suppose this patient presented more severe symptoms of diabetes.

Trial Diet

	Available Carbohydrates	Calories
C-50	50	200
P-50	30	200
F-130		1170
	80	1570

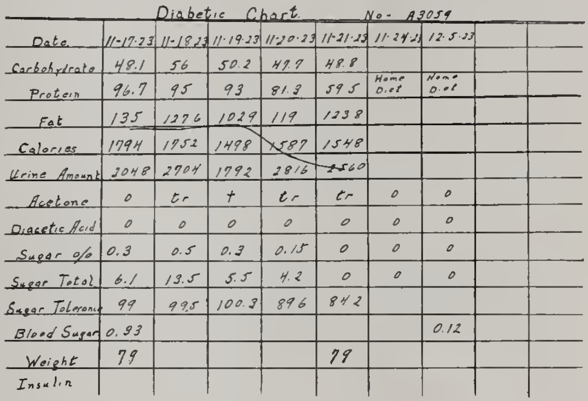
Urine 2000 c. c.
Per cent sugar 2½
Total sugar..............................50
—
Sugar tolerance.......................30

In balancing the diet as before

	Available Carbohydrates	Calories
C	6	24
P-60x.66=40. Make 40	24	160
		184
		1500
		184
		1316÷9=144

F-C-144-30

A diet with this F-C ratio would be unsafe. This patient would have to have insulin in addition to diabetic measures to control the diabetes.



Diabetic Chart No- A3059

Date	11-17-23	11-18-23	11-19-23	11-20-23	11-21-23	11-24-23	12-5-23		
Carbohydrate	48.1	56	50.2	47.7	48.8				
Protein	96.7	95	93	81.3	59.5	Home Diet	Home Diet		
Fat	135	127.6	102.9	119	123.8				
Calories	1794	1952	1498	1587	1548				
Urine Amount	2048	2704	1792	2816	2560				
Acetone	0	tr	+	tr	tr	0	0		
Diacetic Acid	0	0	0	0	0	0	0		
Sugar %	0.3	0.5	0.3	0.15	0	0	0		
Sugar Total	6.1	13.5	5.5	4.2	0	0	0		
Sugar Tolerance	99	99.5	100.3	89.6	84.2				
Blood Sugar	0.93						0.12		
Weight	79				79				
Insulin									

Case No. I. Mild Diabetes.

Patient fat, and over forty.

Sugar tolerance about 90 grams daily. This means a good prognosis.

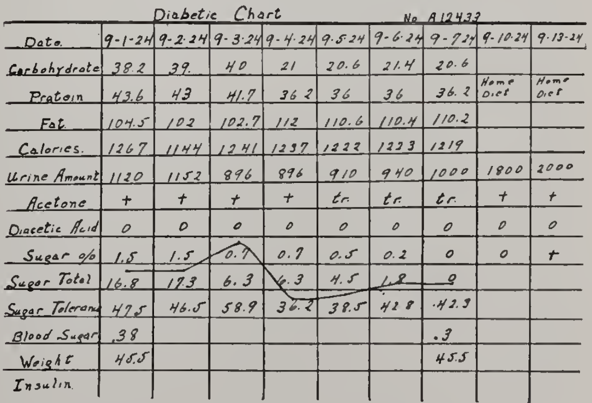
Points of interest are:

Low caloric requirement, could not eat 25 calories per kilogram.

Became sugar and acetone free on restricted diet.

Blood sugar lowered and reached normal in few days.

Patient controlled her diabetes by dietary means alone for several years, dying of cardiac complications, showing no symptoms of diabetes.



Diabetic Chart No A12433

Date	9-1-24	9-2-24	9-3-24	9-4-24	9-5-24	9-6-24	9-7-24	9-10-24	9-13-24
Carbohydrate	38.2	39.	40	21	20.6	21.4	20.6		
Protein	43.6	43	41.7	36.2	36	36	36.2	Home Diet	Home Diet
Fat	104.5	102	102.7	112	110.6	110.4	110.2		
Calories	1267	1144	1241	1237	1222	1223	1219		
Urine Amount	1120	1152	896	896	910	940	1000	1800	2000
Acetone	+	+	+	+	tr.	tr.	tr.	+	+
Diacetic Acid	0	0	0	0	0	0	0	0	0
Sugar %	1.5	1.5	0.7	0.7	0.5	0.2	0	0	+
Sugar Total	16.8	17.3	6.3	6.3	4.5	1.8	0		
Sugar Tolerance	47.5	46.5	58.9	36.2	38.5	42.8	42.3		
Blood Sugar	.38						.3		
Weight	45.5						45.5		
Insulin									

Case No. II. Moderately Severe Diabetes.

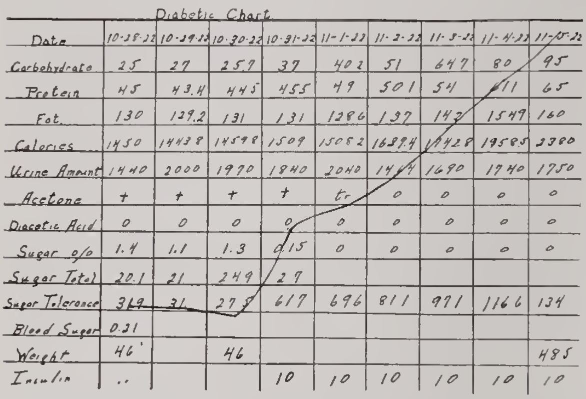
Patient twenty-five, marked loss of weight, and all other symptoms of diabetes.

Sugar tolerance of about 40 grams and so difficult to keep sugar free and acetone free.

Acetone and sugar reappeared on home diet.

Blood sugar high although sugar free. A high threshold.

More strenuous treatment indicated.



Diabetic Chart

Date	10-28-22	10-29-22	10-30-22	10-31-22	11-1-22	11-2-22	11-3-22	11-4-22	11-5-22
Carbohydrate	25	27	25.7	37	40.2	51	64.7	80	95
Protein	45	43.4	44.5	45.5	49	50.1	54	11	65
Fat	130	129.2	131	131	128.6	137	142	154.9	160
Calories	1450	1443.8	1459.8	1509	1508.2	1639.4	1742.8	1958.5	2380
Urine Amount	1440	2000	1970	1840	2040	1444	1690	1740	1750
Acetone	+	+	+	+	tr	0	0	0	0
Diacetic Acid	0	0	0	0	0	0	0	0	0
Sugar %	1.4	1.1	1.3	0.15	0	0	0	0	0
Sugar Total	20.1	21	24.9	27					
Sugar Tolerance	31.9	31	27.9	61.7	69.6	81.1	97.1	116.6	134
Blood Sugar	0.21								
Weight	46'		46						48.5
Insulin	..			10	10	10	10	10	10

Case No. III. Severe Diabetes.

Patient thirty. All symptoms of diabetes marked.

Low sugar tolerance. Persistent acetone.

Marked effect with insulin.

Acetone free and sugar free on liberal diet.

Rapid gain in weight.

CONCLUSION

The treatment of diabetes mellitus is diet with or without insulin. Inasmuch as the sugar tolerance is the guiding factor in the treatment of any diabetic, a determination of this tolerance should be the first step in the treatment. In order to determine with any considerable degree of accuracy the ability of a patient to utilize sugar, we must know the carbohydrate intake and the carbohydrate output, the difference between the two being the amount the patient is able to utilize, or his sugar tolerance.

The diet of a diabetic person should contain an amount of protein sufficient to keep the body in a state of nitrogen equilibrium, an amount of available carbohydrate which is less than the sugar tolerance, and an amount of fat great enough to make the total diet sufficient in caloric value, and not too great to be burned by the carbohydrate. If the sugar tolerance is so low that these requirements cannot be fulfilled, then insulin is indicated.

DISCUSSION

DR. ROGERS, (closing): There is a point I should like to mention again, and that is the value of the sugar-tolerance test, particularly in the patient who thinks he is in good health and we find sugar in his urine. A sugar-tolerance test in that patient I think is of a great deal of value. If the curve is normal, I think we need not pay a great deal of attention to the sugar in his urine. It may be due to one of many causes, such as exercise or worry or excessive diet. If the sugar curve is slow in coming down, I think we have an early diabetc, and it is in that class of patients we can do the most good.

THE PROGNOSIS OF EARLY SYPHILIS

Otis W. Martin, M. D., Omaha, Nebr.
(From University of Nebraska College of Medicine)

The following study is based upon two hundred and fifty cases of syphilis of less than eighteen months' duration, selected from the Venereal Clinic of the University of Nebraska Dispensary during the years 1921, '22 and '23. During this period 792 cases of syphilis were admitted and have been tabulated as to age, sex, initial lesion, Wassermann or dark field, amount of treatment and results.

Of the 250 early cases, 177 or 70% discontinued treatment after the healing of the active manifestations, before completing even one course of six neo-arsphenamine and eighteen mercury salicylate injections. This at once presents a problem of serious character, particularly when it occurs in a group in which there is a negligible economical objection, personal follow-up work, reporting to the State Board of Health and even legal persuasion. It is a most important factor from the standpoint of public welfare, and should be controlled more effectively. Such neglect is largely the result of lack of confidence in the physician and a lack of realization of the importance of long continued treatment. It is necessary that every physician take a personal interest in each patient, and impress upon him the necessity of long continued treatment. More can be accomplished in this way than by legal enactment.

Fourteen, or 19% of the seventy-three who completed the first course, discontinued treatment at this point, largely because they were disposed to rely on a negative Wassermann rather than the physician's judgment of it. Two of these fourteen cases appeared at the clinic several months after a negative Wassermann and supposed cure. Both had strongly positive Wassermann tests which could not be reduced, in one case by four and in the other by five full courses of treatment. These cases illustrate the error of relying too much on an early negative blood test.

The value of continued treatment in the early cases is well illustrated by forty-six, or 63% of the seventy-three cases, who completed their first course of treatment with a negative blood test. Of these, fourteen stopped their treatment at this stage, as noted above, and thirty-two continued. Only one of the thirty-two returned subsequent positive blood tests, even after nineteen neo-arsphenamine and fifty-one consecutive mercury injections. Of the remaining thirty-one, several were followed through as high as six and eight negative tests at six months intervals under treatment. Just how much treatment should be given to these negative cases before dismissal is a question. The usual procedure is to give a minimum of three full courses of treatment regardless of a negative Wassermann test, followed by blood tests at six months or yearly intervals through several years. The prognosis is good in such cases.

The cases which show a positive Wassermann after the first course of treatment offer a poorer prognosis. Twenty-seven such cases were found. Nine of these discontinued treatment at this point. Of the eighteen who remained, only three ever gained a negative Wassermann with three to six courses of treatment.

Time and further treatment may change these figures, but they represent the happenings of 250 early syphilitics in dispensary practice, over a period of three to four years. Physicians are often bombarded with questions as to the length of time it will take to effect a cure in acute syphilis and the number of treatments to be given. These questions must be answered conservatively and honestly by the physician, for there is an unscrupulous tendency on the part of some to underbid one another on the length of time it will take to effect a cure. It is very easy to sell the over-anxious syphilitic definite statements which tend to discredit the profession and often harm rather than help the patient.

Dispensary patients perhaps represent a different class from office practice. Their number has increased greatly since the war, due both to exposure and to education. Contrary to the somewhat prevalent opinion, I believe the dispensary venereal patient is of average or somewhat better than the average in character. They range in years from birth to old age. They are people who, though forced by necessity to accept charity, have public pride enough to submit themselves for treatment. Many people are too selfish or ignorant to consult any physician, or to care for their own health or that of their associates.

The conclusions from this statistical study of dispensary patients are as follows:

1. Seventy per cent stop treatment as soon as acute symptoms disappear.
2. Nineteen per cent of the remainder discontinue after the first negative Wassermann test.
3. Sixty-three per cent of those who complete the first course of treatment have a negative Wassermann test, which will remain negative with few exceptions if treatment is continued through three or more courses.
4. The prognosis in those with a positive Wassermann test after the first course of treatment is not good.

A CASE OF COMPLETE HEART BLOCK

Arthur L. Smith, M. D., Lincoln, Nebraska

Through the courtesy of Dr. W. R. Boyer of Pawnee City, I was given the opportunity of seeing Mr. J. J. O. who has been confined to his bed during the past two years in Doctor Boyer's hospital. The case is, in my opinion, of sufficient interest to report, as this condition is rather rare.

The patient is 70 years of age and has been affected with dyspnea and a slow heart rate during the past five and one-half years. During the last two years he has had no symptoms as long as he stays in bed, but as soon as he attempt to stand up he becomes dizzy and short of breath. When in bed he appears perfectly normal, except for the slow rate of the pulse.

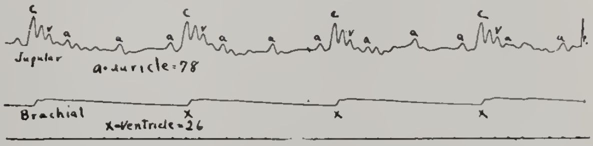


Fig. I. Rate of auricle 78 per minute. Rate of ventricle 26.

A polygram was taken and it showed the auricular rate to be 76, while the ventricle was contracting at the rate of 26 per minute. Exercise increased the rate of the auricle to 88, while the ventricle showed no acceleration. The polygram shows the auricle and ventricle beating at two separate rates and rhythms. The auricular stimuli arising in the sino-auricular node result in the auricular contracting but are not conducted to the ventricle. The ventricle has established its own rhythm and is not dependent upon the auricle for the stimuli which are normally conducted to it through the auriculo-ventricular bundle of his.

This is a case of complete heart block in which the auriculo-ventricular bundle does not functionate and the auricle and ventricle beat absolutely independently of each other.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
Terminal Building, Lincoln, Nebraska

F. A. Long, M. D., Editor..............................Madison, Neb.
R. B. Adams, M. D., Business Manager,
Centre McKinley Building, Lincoln, Neb., Tel. B2625

COMMITTEE ON JOURNAL AND PUBLICATION.
F. A. Long, Chairman..............................Madison
W. O. Bridges..............................Omaha
B. F. Bailey..............................Lincoln
R. B. Adams, Ex officio..............................Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal.

Manuscripts should be typewriten, double-spaced, not the carbon, submitted.

Reprints should be ordered from the printer, The Huse Publishing Co., Norfolk, Neb.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. X December No. 12

The Nebraska State Medical Journal
Wishes Every Reader
A Delightful Holiday Season

DUES FOR 1926

It has been mentioned in the Nebraska State Medical Journal that the annual dues for 1926 has been raised to $8.00 per member. This is written to help make sure there will be no misunderstanding about it when the call for dues is sent out.

This raise in dues became absolutely necessary for our Association to continue as a constructive organization in its work for the benefit of its members. Many members believed that the dues should be raised more than they have been. A general discussion in the House of Delegates was had over the question. The question was held until the last meeting so that every one could think it over and give his opinion. The motion carried with but one dissenting vote. Consequently the officers of the Association feel that this was a welcome move.

The two main reasons for the increase are:

1. The Defense Committee. Due to the epidemic of malpractice suits of the last few years, this committee in 1924 ran behind $1,000.00 and will have a similar deficit this year. Due to savings which we had from previous years we were able to pay this indebtedness, but our savings are about exhausted. Therefore, part of this raise is for the Defense Committee. It has never lost a suit.

2. Public Affairs. It is becoming more and more necessary for organized medicine to go to the people with its ideas for the improvement of mankind generally. This, of course, has to be done in the way of educational propaganda and this costs money. Someone must look after it, and he cannot work for nothing. Also, the propaganda itself has expense attached to it. Part of the raise in dues is to help this work.

The two above mentioned departments of the Association, as already stated, are to be helped by this raise. However, it is hoped that there will also be provided a fund as time goes on that can be used for emergencies that may arise. This fund does not need to be large and can grow from what is left over after the needs of the Defense and Public Affairs Committees are taken care of.

All this is here said to make certain that everyone fully understands why the raise was made, and the officers hope that every member will pay the added amount willingly, and thereby do his or her part toward making our Association a greater Institution.

—R. B. Adams, Secretary-Treasurer.

WHAT OF THE STEWARDSHIP?

We are approaching the end of another year in the life history of the Nebraska State Medical Association and we do well to reflect upon our stewardship. Have we kept the faith? Obviously, we cannot answer this query without reservation. We have and we have not been good and faithful stewards.

It is apparent to one whose official capacity has brought him in close range of the many problems affecting the practice of medicine in our state that there is a spirit of unrest in our ranks as never before. This is so not because we are mindful of our shortcomings in the practice of the science and the art of medicine. We have no occasion to reproach ourselves for the lack of professional attainments. The medical profession of Nebraska will compare favorably with that of any state in the union. But judging from daily contact with the doctors of the state and from the replies made to the questionnaire sent out a year ago, it is the ethical and the economic phases of the practice of medicine that cause so much unrest. It is the inroads of the various cults in medicine; the practice of fee-splitting; the lack of mutual confidence in our colleagues; the inroads of contract practice and state medicine; the problems of group practice, these and other equally weighty problems are pressing upon us almost to the point of despair.

Some of these problems have been discussed in previous editorials. For the present, let us confine ourselves to the consideration of a proposed remedy for many of our ills. This remedy is not a specific but rather a palliative. It is not a "cure-all" but will go far to solve many of our problems.

The Nebraska State Medical Association cannot function efficiently on its meager allowance. More money is needed and, of course, it can only come in the form of annual dues. True, the dues were advanced three dollars last year, but this is not enough. The drain upon our medical defense fund will absorb all this increase in dues and leave nothing to provide for the extension of our activities. If we are to cope with the cults, we must spend money and large sums on publicity and legislative activities. Above all we should employ at no mean salary a full time secretary whose duty it shall be to visit every nook and corner of our state. Such a secretary could do much to iron out our difficulties and make for a more effective and harmonious profession. All this, I repeat, takes money, but if our professional interests are at stake should we not consider it a good investment? Our secretary, our editor, our council and the various committees are functioning as best they can with the means at their command, but they must be provided with the sinews of war.

This is the last of a series of editorials written by your retiring president. May I express my appreciation of the co-operative efforts of all who are promoting the interests of our State Association? And may I bespeak for our president-elect the loyal support of our entire membership? I thank you.

—Palmer Findley.

INCOME TAX REPORT DEDUCTIONS

The Omaha-Douglas County Medical Society has taken the initiative in this state in a movement to force income tax deductions. At a recent meeting the case of the medical profession was plainly stated and on motion a sample letter to our representatives at Washington was ordered drawn up and the members of the profession are asked to take personal interest in the matter and send this, or a letter of similar porport, to his congressman and the senators.

Certain it is that action, not talk, is what the present issue demands. Every physician in the state who reads this should act at once.

Dear Senator:

Ever since the income tax law went into effect the physician has been unjustly discriminated against by a ruling promulgated by the department. The law specifically states that all expenses incurred in the conducting of the business are exempted. Under this ruling all business firms deduct the expenses of investigations of their business, visiting investigators in the field, attendance to business meetings, such as bank meetings, automobile salesmen's conventions, investigations of the conditions in foreign countries, etc.

On the other hand, a doctor is refused this deduction for attending scientific medical society meetings, post-graduate study, visiting clinics or any contribution made toward entertaining a medical society or members of the society, all of which have a direct bearing on his profession and his ability to practice it and to a large extent the income from the said practice. This is manifestly an unjust discrimination, especially so, in contradistinction to the business man who conducts his business solely for the profit. We take care of the poor of the nation in our offices and in the clinics from one end of the country to the other without compensation, except in a few isolated cases. Rather than being discriminated against, the nation should recognize its indebtedness to us and put us in the preferred class for a reduction of our tax, rather than a class to pay an increased taxation.

Every endeavor has been made by the medical societies to have this ruling changed, but without success, so we are now appealing to you to pass specific legislation so as to secure this exemption for us and put us on an equal footing with other business.

Trusting that you will use your very valuable influence to see that this legislation is enacted, I am,

A GLIMPSE OF THE LIFE AND WORK OF LOUIS PASTEUR

No scientist, not a medical man, has done as much for Medicine as did Louis Pasteur. His life story is one of the most fascinating in the history of science. His epoch-making scientific discoveries have made his name almost a household word the world over.

He was born December 27th, 1822, in a rural district of France, of plebeian parentage, his father being a tanner. His early youth was not marked by any evidence of genius. He developed signal ability in crayon drawing during his developmental period. At 16 he was sent to Paris to a preparatory school. At 18 he received the degree of bachelor of letters at Besancon, and the following year became a teacher at the same school. At the age of 20 he took the degree of bachelor of science before the Dijon Faculty, with a memorandum in the record of the school that he passed mediocre in chemistry. In 1843 (at 21) he was at the Ecole Normal, Paris, where he became interested in chemistry, particularly in crystallization and polarization. At 26 he was professor of physics at Dijon. At 27 professor of chemistry at Strassburg. At 32 he was dean and professor at Lille. At 35 he announced his discoveries on lactic acid and alcoholic fermentation. His study of fermentation led to the study and science of bacteriology. From Pasteur, Lister got his first idea of the application of the germ theory of disease which led to his antisepsis.

He found the cause of chicken cholera to be a bacterium and developed an attentated virus as a vaccine for the disease. Anthrax was very destructive among cattle and sheep so he next undertook to discover whether a vaccine could be made from the bacillus anthracis and having succeeded he demonstrated the success of the discovery on a flock of sheep.

In 1873 he was elected to the Academy of Medicine.

The crowning achievement of his life was the discovery of anti-rabic virus and through his work on this problem, rabies which formerly was epidemic, and wide spread, came under control.

In 1888 the Pasteur Institute was established as a centre for the study of contagious diseases and as a dispensary for the treatment of hydrophobia, and this is today the most important single center of research in the world. In this Institute, Roux, a student of Pasteur in 1894 produced diphtheria antitoxin, a logical development of Pasteur's former work. Pasteur died in September, 1895.

THE END OF VOLUME X

This is the end of Volume X of the Nebraska State Medical Journal, although, paradoxically, the Journal is but nine and one-half years of age. Publication was begun July, 1916, and the first volume contains but six numbers.

Volume X contains 500 pages of reading matter much of it very high class material, scientifically.

It is the intention of those in charge of the Journal to fittingly celebrate the tenth anniversary by a special number in June, 1926.

The editor again wishes to thank the profession for many kindnesses and for increasingly greater cooperation.

THE CLINICAL CONGRESS AT PHILADELPHIA

There were about three thousand in attendance at the clinical congress from different parts of the United States and Canada. Sir William Arbuthnot Lane, Bart., of London, was there and delivered the principal address, giving the John B. Murphy Oration in Surgery.

Day after day the leading surgeons of this country held clinics in the different hospitals.

Dr. Rudolph Matas of New Orleans varied this procedure a little by showing through motion pictures the operations for surgical cure of aneurysm and thus restoration of normal circulation of the blood, through which long ago he won a special reputation.

Dr. Charles F. Nassau, Chairman of the Committee on Arrangements, welcomed this Society and, in doing so, reminded them that in Philadelphia was delivered the first medical lecture in the United States, the first scientific medical paper printed, the first hospital founded, and the first medical school established, that of University of Pennsylvania. He referred to the fact that the first medical contribution printed in America was a discussion of lead-poisoning from rum distilled in poorly constructed stills. Dr. Charles H. Mayo, President of the College, suggested that, now after 180 years, opportunity presents itself for some medical man to write a paper on a similar theme.

Sir Arbuthnot Lane said "Eat foods that primitive mankind gets. Instruct mankind about foods and then a new people will grow up, replacing the miserable specimens of humanity who now constitute a large proportion of our population, especially in the large cities." He expressed the conviction that the most potent means of preventing cancer, now one of mankind's most deadly foes, is the elimination of chronic constipation.

There were group conferences held in the ball room, in the garden, and in the different rooms of the Bellevue-Stratford Hotel.

There seemed to be a very keen interest in all the meetings in general this year, and I believe a good steady progress along the line of standardizing hospital and service generally is being accomplished.

Fellowships were conferred on the following Nebraskans: Dr. Charles Herbert Fox, Kearney; Dr. Sanford R. Gifford, Omaha; Dr. Lester Miles Stearns, Kearney; Dr. James M. Willis, McCook.

— W. L. Shearer.

THE INTER-STATE POST-GRADUATE ASSEMBLY OF AMERICA

The writer spent three days at the Inter-State Post Graduate Assembly of America which met in St. Paul, October 12th to 16th inclusive. My impressions of this huge affair, though mixed, are highly favorable. That such qualifying adjectives as "fine," "bully," "great" were commonly used in response to the question: "What do you think of the meeting?" was ample proof that the meeting was filling an admitted want. Furthermore, a reported registration of over three thousand attests the wide-spread interest in such an association.

The brains for this huge enterprise (they are of a superior order and were much in evidence) are furnished by the Managing Director, Dr. William B. Peck of Freeport, Illinois and his well chosen associates. For instance a microphone was installed the first day on the speaker's desk. This served admirably except in the instance of certain peripatetically inclined speakers. Another microphone was installed the afternoon of the first day near the lantern screen. This did not completely solve the problem. The next day there were five microphones on the stage and it was almost impossible for a speaker to dodge one; if a speaker happened to wander out of range of a microphone one was either brought to him or he was dragged within range of one. This was a little thing but it spelled success as against failure. There was no difficulty in hearing in any part of the auditorium and this was the only large medical meeting of the many which I have attended of which this could be said. The meetings started on schedule, ran on schedule and finished on schedule. If a certain man was to appear on the program at a certain hour one could go and expect to hear that man unless unavoidable contingencies made substitution necessary. The Pacific Northwest Medical Society under the direction of Dr. Fredrick Epplen was run in a similar manner. The inference for our domestic societies would seem to be: Get a secretary or manager of ability chosen by merit and not by politics, reward him sufficiently to maintain his interest, then let him run the show.

The program was practical, if by practical one means usable. Nearly all of the matters dealt with came within the scope of the day's work of the busy physician or specialist. To enumerate papers and clinics of interest and value would be to copy at large from the program. However, little was heard of that fundamental experimental research, which spurs the imagination and stimulates independent thinking. Cannon's paper on "Some Recent Revelations of the Denervated Heart" was a noteworthy exception. The paper of Hanau W. Loeb on "The Anatomic Relation of the Optic Nerve to the Para-Nasal Sinuses" was another paper whose values though obviously clinical were fundamental. The program seemed to err on the side of consciously or subconsciously excluding in the main contributions of physiological, pathological and biochemical nature—in short the laboratory sciences. While the obviously practical may appeal to us most at the moment we must never forget that the future in medicine rests largely with the laboratory sciences.

The work necessary to get together such a galaxy of medical talent for one meeting would appear tremendous. I was told, however, that the energetic manager had gone to the Universities for his talent and that they had given freely of their men at negligible financial outlay to the organization. This method of obtaining talent probably accounted for the too sophomoric presentation of clinical material by an occasional speaker.

Such societies as the Inter-State Post Graduate Assembly satisfy an obvious need. Their number should be increased and they should receive such financial support from physicians as will bring the best there is in medicine to those who practice its science and art.

—A. D. D.

OCULISTS OR OPTOMETRISTS — WHICH?

Dr. James M. Patton, Omaha (Journal A. M. A., Aug. 22 1925), believes that the majority of optometrists are in the main making an honest effort, through preliminary training and the establishment of definite standards of ethics and proficiency, to render service to the public. However, during the last five or six years there has been a growing activity on the part of certain optometrists, some of whom hold official positions in state optometric organizations, which can be interpreted only as an attempt to restrict the rights of the regularly licensed oculist so far as the fitting and prescribing of glasses is concerned, even looking forward to the time when all oculists will be compelled by law to pass an examination before the board of optometry of the state in which he may be located. The status of optometry in each state is reviewed by Patton. He concludes by saying: Let us remember that there is an active group of influential optometrists who are perfectly willing to prevent by law all who are not registered optometrists from fitting glasses, and that active measures are contemplated to compel the oculist to pass their boards, before he can legally practice this phase of his profession. Let us be suspicious of bills regulating optometry containing ambiguous clauses, or those restricting the rights of manufacturing opticians who ordinarily serve the oculist. Let us remember that ours is a profession and not a trade. We cannot afford to face the charge of making a profit out of the glasses we prescribe, but we do have the right to protect our patients from the exorbitant prices and high pressure retail sales methods of the optometrists. We must be awake to the situation; and, while we may have no quarrel with the optometrist who limits himself strictly to his own field, at the same time, we owe it to our profession and to our patients to forestall any legislation which will limit the fitting of glasses to a single group.

DIARRHEA

Diarrhea of a few weeks' duration, whether in the young or old, and regardless of the manner of onset, Dr. Cabot (Canada Med. Assn. Jour.) says with the experience he has had, would lead him to think first of cancer, and then of tuberculosis or other non-cancerous ulceration of the bowel.

EDITORIAL PARAGRAPHS

Along the highways in Ohio, little white crosses are erected where some person has met death in an auto accident. The number is said to be appalling.

A survey indicates that but one out of nineteen college students who have autos at their disposal, make good in their college work.

Dear Governor: Some of the appointments of medical delegates to welfare associations made by you recently, look very much as if you were dispensing political pap.

If it is worth $25.00 to belong to the golf club, or to any club, is it not worth $8.00 to belong to the Nebraska State Medical Association, which concerns your life work?

New ads in the Journal are—Taylor Instrument Co., The Jell-O Co., and the C. V. Mosby Co. Read the ads for your own benefit; not to please the editor and business manager!

How can the editor give a report of your county and district medical society meetings, if he knows nothing, or next to nothing about the meetings? Prompt reports from secretaries or others would help a lot.

The New University hospital at Ann Arbor was dedicated Nov. 19-21. Special features were, the formal dedication, the annual Mayo Lecture by Dr. W. J. Mayo, two days of clinics at the hospital and a general meeting.

According to a survey made by Dr. H. R. Edwards, of New York, field secretary of the National Tuberculosis association there were 461 deaths from tuberculosis in Nebraska in 1924 and there are 4,150 active cases in Nebraska now.

Another effort is being made by the American Medical Association before the ways and means committee of Congress to allow physicians to deduct from taxable income the amount spent in postgraduate work and in travelling to medical society meetings.

The Community Chest of Louisville, Kentucky, has issued "Hospitals and Health Agencies of Louisville," a survey of 175 pages made by Dr. Haven Emerson and Anna C. Philips. It contains a wealth of information and is a very valuable publication.

The Prudential Insurance Co., reports that insanity was responsible for 24% of the approved total and permanent disability claims allowed policy holders during the past five years, ranking only second to tuberculosis, which was the cause of 35% of the cases.

One of the curious finds of our overseas trip last summer was "rum butter". We came across it at an afternoon tea, in Cumberland county, in the English Lake region. A paste is made with brown sugar and rum and this is mixed with butter. We concluded we were for it.

Ten million dollars has been left by the late James B. Duke, of Duke's Mixture fame, for a medical school at Durham, N. C., four millions for the plant and six millions for endowment. It is predicted that this will become the foremost medical school of the South.

When is a burn, not a burn? When all the burned tissue has sloughed off. It then needs to be treated like an infected wound, not like a burn. This is suggested by seeing a wound resulting from a burn two months ago and from which the sloughs had separated six weeks before.

It is well to recall that the average curative dose of diphtheria antitoxin is 10,000 units and the protective dose is 1,000 units; that in severe or late cases doses from 20,000 to 100,000 units are indicated and that the dose may be repeated at intervals of from 6 to 12 hours, if necessary.

It is gratifying to notice the increasing interest of the press in public health problems. One such article, an editorial, appeared in a recent issue of the New York Herald Tribune stressing the facts that prompt diagnosis and treatment are absolute essentials for the permanent cure of cancer.

Under the presidency of Dr. Robert T. Morris of New York, a national endowment fund for The Physicians' Home Inc.—"a place where aged, indigent and decepit physicians may end their days in tranquility"—is being raised. No "drive" is contemplated, but the plan is to carry the appeal to the people through outstanding leadership other than physicians alone.

Chapter 3, Section 4 of the By-Laws reads: "All papers read before the Association shall be deposited with the secretary of the section when read." Plainly, this section means to convey the idea that the paper when read belongs to the Association for publication in the Nebraska State Medical Journal. Original publication of annual meeting papers elsewhere is a plain violation of the By-Laws.

THE SOCIETIES

The Omaha-Douglas County Medical Society meeting at the University Club, October 27th, was presided over by Dr. Adolp Sachs, vice president, owing to the illness of Dr. R. W. Bliss.

Dr. Herman M. Jahr and Dr. F. J. Casey were elected to membership.

A representative from the A. M. A. proposed that the Omaha-Douglas County Medical Society purchase 80 copies of the "Hygeia" to be placed in the Douglas County schools. This would entail the expenditure of about $136.00. It was moved and seconded that this matter be referred to the council and have Dr. Manning appear at that time to present this matter. Dr. Manning spoke very favorably of using this magazine as a medium for education of the teachers who give a course in hygiene in all the grades. At a subsequent meeting 110 subscriptions were ordered paid by the society for the Douglas county schools.

Dr. John Potts called the attention of the society to the fact that traveling expenses to medical meetings were not deductable from the income tax and told of the work he had been doing with legislators in Washington, concerning this matter. Dr. Sachs appointed Dr. Potts and Dr. Lemere as a committee to draft resolutions for this society to be sent to our representatives and senators at Washington. (See editorial page 483). These same resolutions should be sent to the larger societies over the United States in the endeavor to get concerted action on this problem.

Dr. J. P. Lord presented a case history of a man with a compound fracture of the ankle, practically a compound Potts, with extensive laceration of the leg.

The program of the regular meeting consisted of a paper on "Adenoids — with Slides Showing the Adenoid is a Compound Gland, Secreting and Lymphoid, and with a Definite Morphology. The Application of this Knowledge to Operative Technique."—By Henry M. Lemere, M. D.; discussion opened by C. W. M. Poynter, M. D. Others participating in the discussion of this paper were Dr. Potts, Dr. MacDonald, and Dr. Wohl.

The second paper was "What Practical Benefit can be Derived from Our Present Knowledge Concerning Rickets?"—by Floyd Clarke, M. D., discussion opened by H. M. McClanahan, M. D. Those doctors taking part in the discussion were Dr. Henske, Dr. Fouts, Dr. Wohl, and Dr. Levine.

—Earl C. Sage.

The Republican Valley and Tenth Councilor District Medical Societies held their annual meeting at the Hastings State Hospital, October 29th. Dr. and Mrs. W. F. Fast of the institution served a luncheon to about 200 doctors and their wives. Following was the program:

"Dysmenorrhea in Young Girls, Its Results, Prevention and Treatment", Dr. Rachel Long, Holdrege; "Post Operative Results in Gall-bladder, Surgery", Dr. J. E. Uridel, Hastings; "Aspects of Infant Feeding of Interest to the General Practitioner", Dr. L. A. Swanson, Hastings; "Pathology of the Thorax with Lantern Slides", Dr. L. W. Rork, Hastings; "Diagnosis and Treatment of Hysteria", Dr. Ernest Kelly, Omaha.

Dr. J. V. Begtol, Hastings, was elected to succeed Dr. Ralph Green, of Beaver City, as president. The meeting next year will be held at McCook.

The annual meeting of the Eighth Councilor District and Holt County Medical Societies was held at O'Neill, October 22nd. Dr. Warren Thompson, Omaha, gave a paper on "Prevention of Heart Disease"; Dr. C. R. Kennedy, Omaha, gave an informal talk, illustrated by lantern slides, on "Urological Diagnosis"; Dr. Floyd Clarke, Omaha, read a paper on "Rickets"; Dr. J. M. Tische, Wood Lake, read a paper on "Eye Strain"; Dr. Palmer Findley, Omaha, gave his lantern slide lecture on "Puerperal Infection"; Dr. J. W. Duncan, Omaha, spoke on "Urgent Surgery of the Abdomen".

The present officers, Dr. C. H. Root, Bassett, president, and Dr. F. L. Wilson, Stuart, secretary-treasurer, were unanimously re-elected.

The annual meeting of the **Third Councilor District Medical Society** was held at Auburn, October 29th. The meeting was enthusiastic, not largely attended, due to supposedly bad roads, but was a great success on account of good papers and fine discussions. The program follows:

Dr. C. L. Hustead, of Falls City, "Medical Meetings"; Dr. J. C. Tucker, of Beatrice, "Control of Post-Operative Tonsilar Hemorrhage"; Dr. Miles J. Breuer, of Lincoln, "Pulmonary Tuberculosis in General Practice", with lantern slides; Dr. M. C. Howard, of Omaha, "Pulmonary Infection", with lantern slides; Dr. A. P. Overgard, of Omaha, "Fractures", with lantern slides; Dr. L. D. McGuire, of Omaha, "Common Errors in the Treatment of Goitre"; Dr. J. S. Welch, of Lincoln, "Suppurative Peritonitis".

At the meeting, October 29, of the **Buffalo County Medical Society**, Dr. E. C. Sorensen, Ravenna, gave a paper on "Surgical Conditions of the Chest"; Dr. R. L. Hart, Kearney, reported a case of pleural effusion in a patient of 79 years, with prompt recovery after withdrawal of a pint of fluid; Dr. Harry Smith, of the Kearney State Sanitarium, read a paper on "Diagnosis of Chest Conditions". The scientific session was preceded by a dinner at the Midway hotel.

HUMAN INTEREST TALES

Dr. John R. Leibee has moved from Polk to Beatrice.

Dr. C. W. Kopczynski, of Chicago, has located in South Omaha.

Dr. and Mrs. Harold Gifford, have gone on a tour to the orient.

Dr. E. V. Neumann, formerly of Wausa, has located in Sioux City.

Dr. P. J. Flynn, Plattsmouth, was reported ill in an Omaha hospital last month.

A private hospital has been opened at North Platte, by Dr. John S. Twinem.

The West Nebraska Methodist hospital at Scottsbluff, has become standardized.

Dr. C. W. Weeks, Ord, spent the month of October in Chicago, doing postgraduate work.

Dr. E. H. Worthman, Louisville, submitted to a cataract operation in Omaha, recently.

The malpractice suit for $50,000 against Dr. C. L. Egbert, Hastings, was decided in favor of the defendant.

Dr. S. A. Swensen, Oakland, attended the meeting of the Inter-State society in St. Paul, the middle of October.

Dr. C. L. Hustead, Falls City, attended the Inter-State Post-Graduate Medical Assembly at St. Paul, in October.

Dr. Z. E. Matheny, Bellwood, has sold his office equipment to Dr. W. F. Yates, of Omaha, and will locate in California.

Dr. L. D. Harmon, of Table Rock, is about to move to Pawnee City, to become associated with the Pawnee medical unit.

Dr. W. J. Leary, Omaha, has gone to the Philipines to take a position as medical officer in the coast and geodetic survey.

An attempt is being made to establish the Good Samaritan hospital at Oxford under the auspices of the Odd Fellows of that place.

Dr. W. G. Rundle, Orleans, was reported suffering from a systemic infection and was under treatment in an Omaha hospital last month.

Dr. Ralph Luikart has become president of the Omaha Clinical club for the ensuing year and Dr. E. L. MacQuidey, secretary-treasurer.

Dr. J. M. Willis, McCook, after attending the A. C. S. meeting at Philadelphia, made a trip to Florida before returning to his home.

Dr. Amy Chapman, for several years a member of the staff of the Hastings State Hospital, has resigned and has moved to Santa Barbara, Calif.

Dr. A. E. Gadbois and Dr. L. L. Nelson of Norfolk, attended the American Academy of Ophthalmology and Oto-Laryngology, in Chicago, in October.

A hospital is to be established at Geneva by Miss Ada Eggenberger, R. N., in the spacious home of the George W. Smith estate, purchased for that purpose.

Dr. John R. Nilsson and Dr. W. L. Shearer, Omaha, attended the clinical congress of the American College of Surgeons at Philadelphia, the last of October.

Dr. Ethel Laybourne, was elected superintendent of the Bryan Memorial hospital, Lincoln. Dr. Laybourne has been in the foreign mission field in India, for nine years.

Examination of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held in Washington, Chicago, New Orleans, and San Francisco, on December 7th.

A banquet given by the Pre-Medical society of the State University at Lincoln was attended by about 150 premedical students. Dr. J. M. Mayhew was the principal speaker, his topic being "The Internist".

The American Legion and Auxiliary gave a farewell reception to Dr. and Mrs. Lucien Stark, at Hartington, the first of November, on the eve of their departure for Florida where the doctor will engage in practice.

Correspondence from Dr. A. J. Stewart, former councilor of the Twelfth district, now medical missionary at Shaowu, Fukien, China, indicates the probability of his return to Nebraska during the coming spring.

NECROLOGY

Zadok T. Daniel, Rushville, Nebr.; Bellevue Hospital Medical College, 1870; a pioneer practitioner in northwest Nebraska where he had labored for over a quarter of a century; died about the 20th of October, aged 76 years.

Ralph W. Murray, Jansen, Nebr.; Northwestern Medical College, St. Joseph, Mo., 1892; was killed at a railroad crossing, near Shelton, Nebr., while returning from a hunting trip, aged about 57 years.

W. H. Packard, Harrisburg, Nebr.; Creighton University College of Medicine, 1906; sometime practitioner at Cleveland, Ohio, and Lander, Wyo., but for the past dozen years a ranchman in Banner county, Nebr.; died of pneumonia, October 22, aged about 46 years.

Porter F. Dodson, Wilber, Nebr.; Baltimore University School of Medicine, 1889; vice president-elect, Nebraska State Medical Association; a former councilor and for many years active in the work of the Association; sometime a member of the Nebraska State Board of Health and its president; for forty years a practitioner at Wilber; died, November 14, 1925, aged about 59 years.

Membership Nebraska State Medical Association, 1925

By County Societies

ADAMS
Begthol, J. V., Hastings
Boren, A. J., Hastings
Brown, J. W., Hastings
Carson, W. T., Hastings
Calbreath, C. B., Hastings
Chapman, Amy, Ingleside
Cressman, R. G., Hastings
Egen, L. F., Hastings
Fast, W. S., Ingleside
Foote, E. C., Hastings
Hahn, O. H., Hastings
Hamel, E. B., Hastings
Hopkins, S. R., Hastings
Jones, S. J., Hastings
Latta, E. J., Hastings
Mace, J. L., Hastings
Martin, R. D., Hastings
Mullinax, C. E., Hastings
McPherson, J. B., Hastings
Nowers, W. E., Kenesaw
Pinney, G. L., Hastings
Rork, L. W., Hastings
Schaufelberger, Frank, Hastings
Smith, A. A., Hastings
Spicer, C. P., Hastings
Sumner, Ella P., Hastings
Strate, L. K., Hastings
Swanson, L. A., Hastings
Townley, F. N., Kenesaw
Uridil, J. E., Hastings
White, G. N., Ingleside

BOONE
Barnes, F. M., Albion
Davis, J. E., Albion
Howard, H., Albion
Smith, J. W. B., Albion
Sullivan, G. W., St. Edwards

BOX BUTTE
Baskin, M. J., Alliance
Blak, E. V., Alliance
Bowman, L. W., Alliance
Copsey, H. N., Alliance
Farmer, L. R., Alliance
Hand, Geo. J., Alliance
Morris, Minor, Alliance
Slagle, Chas. E., Alliance
Sleeper, L. E., Crawford
Weyrens, Jos. P., Allianee

BUFFALO
Ayers, C. L., Kearney
Basten, C. V. D., Kearney
Breen, A. L., Kearney
Burford, J. A., Kearney
Camerson, A. D., Kearney
Cameron, J. J., Kearney
Dickenson, L. M., Ravenna
Drake, E. A., Kearney
Farrell, Henry, Kearney
Fox, C. H., Kearney
Gibbons, C. K., Kearney
Hall, G. H., Kearney
Hart, R. L., Kearney
Johnson, O. D., Kearney
Laughlin, J. W., Elmcreek
Leedham, Henry E., Kearney
Lucas, Chas., Shelton
McLean, R. F., Gibbon
Miller, J. W., Gibbon
Rose, W. E., Kearney
Smith, Harry C., Kearney
Stearns, L. M., Kearney
Strong, J. A., Kearney
Sorensen, Edwin C., Ravenna
Warner, Sophia E., Kearney
Yoder, C. A., Elmcreek

BURT
Benson, H. W., Oakland
Briggs, G. W., Decatur
Cooper, Herbert, Craig
Dewey, J. R., Oakland
Hall, R. E., Lyons
Hildreth, M. L., Lyons
Keettel, W. C., Lyons
Lukens, Isaiah, Tekamah
Morrow, Wren, Tekamah
Pratt, W. M., Craig
Sears, E. A., Decatur
Swanson, S. A., Oakland
Wood, M., Tekamah

BUTLER
Beede, C. E., David City
Burdick, H. E., David City
Coleman, F. D., Ulysses
Downing, J. H., Rising City
Drasky, B. W., Linwood
Jelinek, J. A., Bruno
Longacre, O. E., Rising City
Marron, J. G., Brainard
Matheny, Z. E., Bellwood
Miller, E. E., David City
Palmer, C. E., David City
Stannard, J. T., Ulysses

CASS
Douglas, G. G., Elmwood
Gilmore, G. H., Murray
Hornbeck, A. R., Murdock
Kruse, F. W., Weeping Water
Liston, O. E., Elmwood
Livingston, T. P., Plattsmouth
Longacre, C. H., Eagle
Talcott, M. D., Greenwood
Thomas, J. W., Nehawka

CEDAR-DAKOTA-DIXON-THURSTON-WAYNE
Bray, R. E., Martinsburg
Buis, John, Pender
Carroll, R. P., Laurel
Cook, A. E., Randolph
Dewey, F. G., Coleridge
Evans, M. H., Emerson
Evans, R. A., Ponca
Graham, J. R., Allen
Gramlich, R. C., Walthill
Gleason, B. F., Randolph
Hansen, N. L., Emerson
Hay, J. C. (deceased), Laurel
Ingham, C. T., Wayne
Johnson, J. M., Hartington
Kerley, Q. A., Randolph
Kilian, L. J., Wakefield
King, J. W., Hartington
Luhman, F. W., Pender
Maxwell, C. H., Dakota City
O'Connell, J. M., Ponca
Peters, G. E., Randolph
Phillips, C. L., Dixon
Richards, R. C., Newcastle
Stark, Lucien, Hartington
Talboy, W. R., Newcastle
Tellesen, C. C., Wynot
Weyer, S. M., Wakefield
Zulauf, W. C., Jackson

CHASE-DUNDY-HAYES-HITCHCOCK
Armitage, A. E., Culberton
Bailey, Byron G., Wauneta
Brown, L. E., Stratton
Fellers, A. B., Palisade
Funk, H. E., Culberton
Hoffmeister, Geo., Imperial
Lewis, N. H., Benkleman
Premer, J. F., Benkleman
Stewart, E. M., Imperial
Stewart, W. E., Stratton
Thomas, A. H., Trenton

CLAY
Asa, O. C., Ong
Bentz, Geo. H., Fairfield
Campbell, W. Allen, Glenville
Gooden, C. W., Harvard
Griess, R. O., Harvard
Jones, Robert, Edgar
Latta, J. O., Clay Center
Seely, H. H., Harvard
Spatz, J. E., Fairfield
Stone, J. G., Sutton
Thomas, W. M., Edgar
Welch, J. M., Sutton

COLFAX
Eby, Chas., Leigh
Koory, S. B., Schuyler
Kolouch, F. G., Schuyler
Kavan, W. J., Clarkson
McGowan, P. H., Schuyler
Sixta, L. H., Schuyler
Vosika, Fred G., Clarkson

CUMING
Anderson, Albert W., West Point
Chapman, L. F., West Point
Crosby, W. L., Beemer
Francis, H. W., Bancroft
Heacock, Frank M., Bancroft
Kiefer, J. J., West Point
Morse, Marie H., Wisner
Riley, L., Wisner
Riley, W. K., Wisner
Thompson, I. L., West Point

CUSTER
Amick, Carl G., Loup City
Burnham, F. A., Arnold
Bryson, R. D., Callaway
Carothers, Paul H. J., Broken Bow
Downing, A. R., Merna
Dunn, J. E., Arnold
Higgins, R. P., Ansley
Hille, R. W., Arcadia
Kalar, J. R., Ansley
Kanton, D. B., Sargent
Koefoot, Theo. H., Broken Bow
Landis, H. B., Broken Bow
McNulty, J. F., Taylor
Morrow, J. H., Merna
Mathews, A. L., Calloway
Mullins, C. S., Broken Bow
Pennington, G. E., Broken Bow
Pinekney, C. E., Broken Bow
Rumery, A. C. (deceased), Mason City
Rydberg, C. A., Litchfield
Spivey, C. D., Anselmo
Talbot, W. E., Broken Bow
Wade, J. C., Oconto
Wanek, A. E., Loup City
Wilson, J. D., Grass Creek, Wyo.

DAWSON
Anderson, Joel, Gothenburg
Bozarth, J. W., Lexington
Birkofer, W. J., Gothenburg
Easton, R. H., Eustis
Edwards, Chas. B., Overton
Fochtman, J. H., Cozad
Fochtman, L. H., Cozad

Kile, J. B., Eddyville
Moore, M. S., Gothenburg
Rosenberg, Frank J., Lexington
Sheets, Chas. H., Cozad
Stevenson, E. C., Gothenburg

DODGE

Buchanan, A. E., Fremont
Byers, R. C., Fremont
Byers, Geo. A., Fremont
Davies, W. J., Fremont
Davies, R. A., Arlington
Devries, J. S., Fremont
Golding, D. G., San Francisco, Calif.
Harvey, Andrew, Fremont
Hansen, B. B., Hooper
Heine, C. D., Hooper
Heine, W. H., Hooper
Hoff, A. E., North Bend
Hustead, E. L., Scribner
Kenney, B. V., Dodge
McKnight, H. P., Uehling
Martin, E. W., Fremont
Myers, H. D., Howells
Metzinger, J. J., Fremont
Miske, George, Arlington
Moore, C. G., Fremont
Morrow, H. N., Fremont
Pederson, H. C., Fremont
Preston, S. A., Fremont
Reeder, Grant, Fremont
Richardson, Ira F., Fremont
Seivers, C. P., Fremont
Seward, Guy, Fremont
Van Metre, R. T., Fremont

FILLMORE

Ashby, A. A., Fairmont
Bixby, J., Geneva
Delfs, C. G., Schickley
Harvey, E. A., Ohiowa
Hickman, J. C., Geneva
Smrha, V. V., Milligan
Stratton, A. B., Exeter
Wiggins, W. S., Exeter

FRANKLIN

Baker, F. L., Hildreth
Campbell, R. B., Franklin
Devers, W. I., Upland
Graham, A. C., Bloomington
Malick, U. H., Bloomington
Nail, F. E., Riverton
Neville, Dennis, Hildreth
Packwood, W. E., Riverton
Smith, Hal C., Franklin
Sparks, M. L., Bloomington

FURNAS

Briggs, H. A., Meenah, Wis.
Cone, E. E., Oxford
Doher, T. L., Wilsonville
Green, Ralph D., Beaver City
Kee, A. L., Cambridge
McCabe, F. H., Cambridge
Shank, F. W., Oxford
Smith, Don L., Wilsonville
Stewart, B. F., Cambridge
Waller, J. E., Arapahoe

GAGE

Bachle, E. P., Liberty
Baird, C. G., Beatrice
Bradley, C. A., Beatrice
Brown, H. R., Beatrice
Buckley, J. W., Beatrice
Curry, Chas. S., Beatrice
Gafford, C. C., Wymore
Deardorf, B. M., Clatonia
Francis, Elias, Wymore
Fall, C. P., Beatrice
Gillespie, P. L., Beatrice
Hepperlen, H. M., Beatrice
Haworth, D. E., Wymore
Judd, J. H., Beatrice
Lee, A., Pickrell
McGirr, J. I., Beatrice
Penner, H. G., Beatrice
Penner, L. E., Beatrice
Rice, C. E., Odell
Pickett, I. N., Odell
Platz, Ada, Beatrice
Purviance, W. C., Beatrice
Reilly, C. J., Beatrice
Roe, G. L., Beatrice
Rush, W. A., Beatrice
Schowengerdt, F. T., Cortland
Sidwell, L. I., Beatrice
Skinner, A. O., Beatrice
Thomas, Chas. W., Barneston
Tucker, James C., Beatrice
Waddell, J. C., Beatrice
Waggoner, J. I., Adams
Warner, E. A., Blue Springs

HALL

Arrasmith, W. J., Grand Island
Arrasmith, W. W., Grand Island
Carson, D. H., Grand Island
Dodd, Edward, Cairo
Engleman, W. T., Mason City
Farnsworth, A. H., Grand Island
Farnsworth, E. E., Grand Island
Gelow, J. E., Grand Island
Grosskopff, L. E., Gretna
Hartenstein, Albert G., Doniphin
Higgins, J. E., Grand Island
Hombach, Wm. H., Grand Island
Hubbell, A. T., Wood River
Jester, Royal F., Doniphan
Johnson, E. G., Grand Island
McGrath, B. A., Grand Island
McGrath, W. D., Grand Island
Nichols, H. C., Grand Island
Phelan, L., Grand Island
Piersol, M. R., Cairo
Raynor, W. J., Burkett
Reilly, John V., Grand Island
Roeder, Geo., Los Angeles, Calif.
Ryder, Frank D., Grand Island
Watson, E. A., Grand Island
Wengert, Henry C., Grand Island
Woodin, J. G., Grand Island
Woodruff, R. C., Grand Island

HAMILTON

Cooper, R. M., Aurora
Hansen, H. C., Marquette
Haughey, I. W., Aurora
Hustead, C. D., Aurora
Kostal, O. A., Giltner
Marvel, G. H., Aurora
Steenberg, Donald B., Aurora
Steenberg, E. A., Aurora
Steenberg, E. K., Aurora
Troester, O. M., Hampton
Troester, Otto M., Hampton
Woodward, J. M., Aurora

HARLAN

Bartlett, W. C., Alma
Campbell, J. N., Stamford
Feese, J. P., Orleans
Gardner, A. J., Orleans
Kerr, Robt. H., Alma
Rogers, D. R., Ragan
Rundle, W. G., Orleans

HOLT

Beatty, J. R., Butte
Baldwin, Francis J., Hay Springs
Bradley, E. B., Spencer
Broz, J. S., Rushville
Cameron, H. C., Johnstown
Carter, L. A., O'Neill
Compton, Arthur N., Valentine
Crawford, W. H., Rushville
Daniel, Z. T., (deceased), Rushville
Douglas, W. J., Atkinson
Downs, E. B., Mayview, Mo.
Dwyer, E. H., Gordon
Finley, W. F., O'Neill
French, O. W., Page
Gardiner, J. F., Stuart
Gill, James W., Chambers
Gilligan, J. P., O'Neill
Griot, Geo. A., Chadron
Hartwell, J. E., Crawford
Hoops, Marcus, Ainsworth
Howell, Wm., Hyannis
Ira, Guy B., Lynch
Johnson, Chester, Valentine
Kriz, R. E., Lynch
Lawson, Thos. J., Long Pine
Lewis, Alfred, Valentine
Limburg, J. I., Spencer
McKee, Neil P., Atkinson
Oxford, Edwin J., Chambers
Rasck, Alfred G., Ainsworth
Remy, G. O., Ainsworth
Richards, B. F., Crawford
Root, Charles H., Bassett
Seasongood, R. R., Naper
Sterling, M. B. C., Burton
Sturdevant, C. S., Atkinson
Vanden, W. H., Crookston
Wilson, F. L., Stuart
Zimmerman, C. F., Naper

HOWARD

Arnold, Merton A., St. Paul
Frandsen, Chas., Scotia
Grothan, O., St. Paul
Hanisch, E. C., St. Paul
Holm, A. H., Wolbach
Lillie, Park A., Hollon, Ind.
Nicholsen, F. S., St. Paul
Pederson, P. M., Dannebrog

JEFFERSON

Birdsall, G. A., Fairbury
Dodge, S. W. (deceased), Fairbury
Harvey, H. E., Fairbury
Harves, W. J., Kansas City, Mo.
Heath, G. A., Fairbury
Humphrey, H. H., Daykin
Meisenbach, G. W., Plymouth
Murray, R. W., Jansen
Potter, H. E., Fairbury
Powell, M. J., Fairbury
Rozell, J. B. (deceased), Fairbury
Taylor, J. S., Fairbury
Welsh, W. L., Fairbury

JOHNSON

Barnes, Chester D., Tecumseh
Davies, Dora M. Judkins, Tecumseh
Fitzsimmons, A. P., Manilla
Heilman, W. L., Sterling
Howard, Sullivan, Elk Creek
Morrill, Walter LeRoy, Sterling
Turner, J. W., Sterling
Zeigler, Chas. H., Vesta

KEARNEY

Andrews, H. S., Minden
Hapeman, Harry, Minden
Powell, W. H., Minden
Wells, Francis A., Minneapolis, Minn.

KEITH-PERKINS

Bell, F. M., Grant
Fall, M. B., Madrid
Heider, Chas. F., Sutherland
Smith, Clinton H., Big Springs
Vandiver, C. E., Ogallala
Vandiver, H. A., Ogallala
Wallingsford, Chas. C., Ogallala

KIMBALL

Ames, A. J., Potter
Miller, A. L., Kimball
Mockett, P. C., Kimball
Rolph, E. L., Kimball
Taylor, J. R., Sidney

KNOX

Burrell, R. H., Creighton
Clark, W. K., Niobrara
Johnson, A. F., Wausa
Johnson, Rudolph E., Wausa
Kelley, B. S., Long Island City
MacNamara, R. B., Crofton
Neumann, E. V., Wausa
Swift, C. H., Crofton

LANCASTER

Adams, R. B., Lincoln
Albin, W. L., Lincoln
Angle, E. A., Lincoln
Andrews, C. F., Lincoln
Angle, E. J., Lincoln
Arnholt, M. F., Lincoln
Arnold, C. H., Lincoln
Bailey, Benj. F., Lincoln
Ballard, C. F., Havelock
Bartholomew, P. H., Lincoln
Becker, Wesley C., Lincoln

Birkner, J. M., Lincoln
Black, Paul, Lincoln
Blakeley, Nathan H., Lincoln
Breuer, C. H., Lincoln
Breuer, M. J., Lincoln
Brooks, E. B., Lincoln
Bryan, A. W., Lincoln
Buchanan, Rea, Lincoln
Carothers, J. W., Lincoln
Chapman, Chauncey, Lincoln
Churchill, I. W., University Place, Nebr.
Clements, Stanley C., Lincoln
Coats, A. J., Lincoln
Colburn, W. O., Lincoln
Cook, S. E., Lincoln
Covey, Geo. W., Lincoln
Crook, Roy, Lincoln
Cummings, E. D., Lincoln
Curtis, W. L., Lincoln
Dayton, W. L., Lincoln
Deppen, E. N., Lincoln
Eiche, Frederick, Lincoln
Everett, Ernest, Lincoln
Everett, H. H., Lincoln
Everett, O. W., Lincoln
Emerson, C., Lincoln
Fahnestock, C. L., Lincoln
Finkle, B. A., Lincoln
Flanagan, May L., Lincoln
Flansburg, H. E., Lincoln
Fleetwood, E. J., Lincoln
Frey, C. Elmer, Lincoln
Furgason, A. P., Lincoln
Graham, A. Winifred, Lincoln
Graham, F. A., Lincoln
Griffiths, D. G., Lincoln
Hanson, Daisy, Lincoln
Harms, W. W. Chas., Lincoln
Haverstock, H. I., Lincoln
Hickman, C. C., Lincoln
Hilton, D. C., Lincoln
Hohlen, K. S. J., Lincoln
Hollenbeck, F. B., Lincoln
Hompes, J. J., Lincoln
Koenig, Margaret, Lincoln
Kummel, R. O., Lincoln
Johnson, C. C., Lincoln
Johnson, F. B., Lincoln
Kail, Carl, Lincoln
Lehnhoff, H. J., Lincoln
Loomis, J. J., Lincoln
Lovell, A. J., College View
Lowry, H. B. (deceased), Lincoln
Lyman, R. A., Lincoln
McCarthy, T. F., Lincoln
MacKinnon, A. I., Lincoln
McKhann, Geo. G., Lincoln
Mayhew, J. M., Lincoln
Metheny, Earl, Havelock
Mitchell, A. R., Lincoln
Moyer, T. C., Lincoln
Munger, Arbor D., Lincoln
Munger, I. C., Lincoln
Neely, J. M., Lincoln
Olney, R. C., Lincoln
Orr, H. W., Lincoln
Owen, L. J., Lincoln
Philbrick, I. C., Lincoln
Ramey, W. N., Lincoln
Reese, S. O., Lincoln
Reynolds, R. W., Lincoln
Richard, W. G., Lincoln
Rider, E. E., Lincoln
Robbins, Emma E., Lincoln
Rogers, F. L., Lincoln
Rowe, E. W., Lincoln
Royal, Paul, Lincoln
Sanderson, D. D., Lincoln
Smith, A. L., Lincoln
Smith, R. D., Lincoln
Snipes, J. J., Lincoln
Speier, Aaron S., Lincoln
Spradling, R. H., Lincoln
Taylor, H. A., University Place
Teal, F. F., Lincoln
Thompson, J. C., Lincoln
Thomson, J. E. M., Lincoln
Thompson, J. W., Lincoln
Waite, H. H., Lincoln
Walker, G. H., Lincoln
Warner, Ruth, Lincoln
Webb, A. H., Lincoln
Weidman, Earl V., Lincoln
Welch, J. S., Lincoln
Williams, B. F., Lincoln
Williams, J. P., Lincoln
Wilson, W. H., Lincoln
Wolfe, Katherine H. K., Lincoln
Woodward, J. M., Lincoln
Zemer, S. G., Lincoln
Zimmerer, E. G., Lincoln

LINCOLN

Ames, M. A., North Platte
Dent, Geo. B., North Platte
Dovey, E. G., North Platte
Fetter, Earl W., North Platte
Jones, Agnes Houston, Wallace
Kennon, C. E., Maxwell
Ken, T. J., North Platte
Kohn, Frank, North Platte
Lucas, V., North Platte
McGraw, H. G., Tryon
Miller, H. B., Lincoln
Morris, Geo. H., Oshkosh
Newman, J. C., Wallace
Ostling, Everet H., Lewellen
Redfield, J. B., North Platte
Sadler, W. W., Bushnell
Schneider, A. L., Henderson
Schock, A. C., North Platte
Selby, Claude A., North Platte
Swift, Chas. L., Brady
Walker, H. H., North Platte
Wilcox, Malcolm B., North Platte
Wurtele, Fred J., North Platte

MADISON

Allerton, Perry, Tilden
Barr, C. C., Tilden
Barry, Augustus, Norfolk
Brush, E. L., Norfolk
Campbell, S. A., Norfolk
Charlton, G. E., Norfolk
Craft, W. T., Norfolk
Desparois, G. B., Pierce
Emrich, E. L., Norfolk
Fletcher, D. L., Orchard
Fletcher, T. W., Orchard
Gadbois, Arthur E., Norfolk
Hopper, O. C., Stanton
Howley, A. N., Norfolk
Jensen, Frank, Newman Grove
Jensen, J. P., Plainview
Johnson, L. A., Plainview
Kelley, W. E., Pierce
Kindred, H. L., Meadow Grove
Long, F. A., Madison
McCarthy, J. D., Elgin
Melerian, H., Plainview
Morris, H. G., Newman Grove
Mullong, Chas. Robt., Norfolk
Nelson, Lloyd L., Norfolk
Nye, F. H., Plainview
Peters, Wm. R., Stanton
Pollock, F. A., Norfolk
Reid, John D., Pilger
Rodgers, C. E., Osmong
Rudloff, F., Battle Creek
Salter, F. G., Pierce
Salter, P. H., Pierce
Sayre, C. Edward, Norfolk
Schlumberger, P. R., Oakdale
Sigworth, Dwight C., Long Beach, Calif.
Sonneland, A. M., Norfolk
Tanner, Edward, Battle Creek
Tashjean, A. B., Norfolk
Waters, T. H., Norfolk
Wilson, E. O., Madison
Young, G. A., Norfolk

MERRICK

Balcolm, R. D., Silver Creek
Benton, Joseph E., Central City
Boyd, Earl E., Central City
Brown, A. D., Central City
Douglas, R. R., Clarks
Drew, H. O., Clarks
Fouts, Frederick, Central City
Glatfelter, Harvey E., Central City
Hutchison, J. W., Central City
Line, T. H., Central City
Minnich, C. S., Palmer
Paxton, C. C., Archer
Triplett, J. M., Chapman

NANCE

Davis, Homer, Genoa
Johnson, F. W., Fullerton
Johnson, J. F., Fullerton
King, H. E., Fullerton
Kirkpatrick, M. C., Fullerton
Williams, C. D., Genoa

NEMAHA

Cline, Edgar, Auburn
Irvin, I. W., Auburn
Kelly, P. D., Nemaha
Lorance, B. F., Auburn
Lutgen, C. A., Auburn
Moell, J. F., Brock
Reed, E. C., Peru
Smith, B. A., Auburn
Stonecypher, D. D., Auburn
Tyler, E. M., Auburn
Van Osdel, S. A., Auburn
Vance, V. V., Peru
Wilson, J. S., Johnson

NUCKOLLS

Brainard, J. E., Superior
McMahon, Chas. G., Superior
Mitchell, W. F., Superior
Nelson, W. H., Ruskin
Trowbridge, J. R., Superior

OMAHA-DOUGLAS

Adams, Arthur B., Omaha
Adcock, L. C., Omaha
Ahlquist, Jonas A., Omaha
Allen, J. F., Omaha
Allingham, H. T., Omaha
Anderson, Harley E., Omaha
Anderson, Wm. N., Omaha
Arthur, Mattie L., Omaha
Attwood, M. H., Omaha
Ballard, Carl H., Omaha
Bannister, John M., Omaha
Banter, Elmer W., Omaha
Baptist, Jno., Omaha
Barnes, E. M., Omaha
Barnhart, E. G., Omaha
Bartek, J. G., Omaha
Bates, Chas. R., Camp Point, Ill.
Beck, Fred O., Omaha
Best, R. Russell, Omaha
Betz, Wm. H., Omaha
Blackman, J. R., Omaha
Bleick, L. C., Omaha
Bliss, Rodney W., Omaha
Black, Max, Omaha
Borghoff, J. A., Omaha
Brandt, Emelia H., Omaha
Brown, Alfred J., Omaha
Bridges, E. L., Omaha
Bridges, Wilson O., Omaha
Burnett, Francis Kirk, Omaha
Bushman, Louis B., Omaha
Callfas, Wm. F., Omaha
Cassidy, Geo. A., Omaha
Chaloupka, Edward, Omaha
Cassidy, W. A., Omaha
Chaloupka, John G., Omaha
Christie, Burton W., Omaha
Clark, Chas. F., Omaha
Clark, F. S., Omaha
Cloyd, Augustus D., Omaha
Condon, Albert P., Omaha
Conlan, Peter T., Omaha
Conlin, Frank M., Omaha
Connell, Karl, Mount Clair, N. J.
Connolly, E. A., Omaha
Conrad, Paul E., Hiawatha, Kan.
Cook, L. J., Omaha
Cross, Clara, Omaha
Crummer, Leroy, Omaha
Cuscaden, Gertrude, Omaha
Cutter, I. S., Chicago
Davis, A. D., Omaha
Davis, Byron B., Omaha

Davis, Edwin G., Omaha
Davis, Jno. C. Jr., Omaha
Davis, Herbert H., Omaha
Davis, Wm. M., Omaha
Davis, Wm. Windle, Omaha
DeBacker, L. J., Omaha
Delanney, L. A., Omaha
Dermody, L. W., Omaha
Dishong, G. W., Omaha
Dodge, Roy A., Omaha
Dow, Andrew G., Omaha
Duncan, J. W., Omaha
Dunn, Arthur D., Omaha
Dwyer, J. R., Omaha
Dwyer, Timothy J., Omaha
Edgington, Avington A., Omaha
Edminston, Aaron W., Omaha
Eldrege, R. B., Omaha
Ellis, P. H., Omaha
Elwood, L. W., Omaha
Emmert, Max, Omaha
Erman, Jacob M., Omaha
Evans, Edward B., Omaha
Fairchild, Nora M., Omaha
Faulk, Fred W., Omaha
Findley, Palmer, Omaha
Fitzsimmons, A. W., Omaha
Fitzgibbons, Henry M., Omaha
Follman, J. C., Omaha
Flothow, Max W., Omaha
Foltz, C. B., Omaha
Ford, Michael J., Omaha
Fouts, R. W., Omaha
Freymann, J. J., Omaha
Gerald, H. F., Omaha
Gerrie, Wallace A., Omaha
Gibbs, Wellington S., Omaha
Gifford, Sanford R., Omaha
Gleeson, John J., Omaha
Gifford, Harold, Omaha
Gilmore, Robt., Omaha
Goetz, James S., Omaha
Goodrich, Guy W., Omaha
Grodinsky, Manuel, Omaha
Greenberg, Abraham, Omaha
Grier, M. E., Omaha
Griffin, E. J., Omaha
Hall, B. W., Omaha
Hall, Lynn T., Omaha
Harrisch, L. E., Omaha
Hamilton, Herschel P., Omaha
Hamilton, Howard B., Omaha
Haney, W. P., Omaha
Jamsem, Alex F. J., Omaha
Harris, T. T., Omaha
Hauslein, Chas. M., Omaha
Hawkins, A. L., Omaha
Heagey, Francis W., Omaha
Hellwig, John W., Omaha
Henry, Edwin C., Omaha
Heumann, J. M. F., Omaha
Henske, Jos. A., Omaha
Hickey, C. W., Bennington
Hirschman, Herman, Omaha
Hoffman, L. O., Omaha
Hoffman, O. S., Omaha
Hollister, Robt. R., Omaha
Holovtchiner, E., Omaha
Holst, John, Omaha
Holtman, A. A., Omaha
Hotz, Harley, Omaha
Howard, M. C., Omaha
Hull, Chas. A., Omaha
Hyde, John F., Omaha
Impey, Chester C., Omaha
Isaacs, David, Omaha
Iverson, J. C., Omaha
Jahr, Herman M., Omaha
James, C. S., Omaha
Jefferson, Alfred, Omaha
Jenkins, Harry J., Omaha
Johnson, Aldis A., Council Bluffs, Ia.
Johnson, Julius A., Omaha
Johnson, F. H., Omaha
Johnson, R. S., Omaha
Jonas, August F., Omaha
Jones, Wesley, Omaha
Kani, Mantz A., Omaha
Keegan, John Jay, Omaha
Kelley, Ernest, Omaha
Kelley, James F., Omaha
Kennedy, Chas. R., Omaha
Kinyoun, F. H., Omaha
Kleyla, Jno. R., Omaha
Knode, Archibald R., Omaha
Koutsky, John W., Omaha
Kully, B. M., Omaha
Lake, Lilburn B., Omaha
Landgraf, E. W., Omaha
Langfeld, Millard, Omaha
Langdon, J. Fred, Omaha
Lanphier, V. A., Omaha
Lemere, Henry B., Omaha
Levey, Philip, Omaha
Lindquist, A. B., Omaha
Lissack, E. H. M., Omaha
Lindquist, A. L., Omaha
Luikart, Ralph H., Omaha
Loechner, W. H., Omaha
Loney, Jas. S., Omaha
Lord, John P., Omaha
Lovely, Frank T., Omaha
Lynch, Delia, Omaha
Ludwig, O. P., Omaha
McArthur, H. J., Orlands, Fla.
McCarthy, Joseph S., Omaha
McClanaham, Harry M., Omaha
McCleneghen, Sam, Omaha
McCrann, W. J. Jr., Omaha
McDonald, Chas. F., Omaha
McDonald, Jno. F., Omaha
McGee, Harry E., Omaha
McGrew, W. R., Omaha
McGuire, L. D., Omaha
McKean, J. W., Cheingniai, China
McLeay, H. S., Omaha
McMartin, Chas., Omaha
Macrae, Donald Jr., Council Bluffs, Ia.
MacQuiddy, E. L., Omaha
Manning, Ernest T., Omaha
Marble, R. E., Omaha
Magaret, O. H., Papillion
Martin, C. L., Omaha
Martin, Otis, Omaha
Martin, Jas. W., Omaha
Mason, C. W., Omaha
Maner, R. Thornell, Omaha
Maxwell, J. T., Omaha
Medders, David A., Omaha
Melcher, W. H., Omaha
Mercer, Nelson S., Omaha
Miller, Glen, Omaha
Mick, W. H., Seattle, Wash.
Miller, H. C., Omaha
Millener, F. H. (deceased), Alpine, Calif.
Milroy, Wm. F., Omaha
Minthorn, Martin L., Omaha
Molseed, C. S., Omaha
Moon, Chas. F., Omaha
Moon, Louis E., Omaha
Moore, Clyde, Omaha
Morrison, Chas. C., Omaha
Moser, R. A., Omaha
Muldoon, J. K., Omaha
Mullen, Thos. R., Omaha
Murphy, F. P., Omaha
Murphy, J. H., Omaha
Murray, F. J., Omaha
Muskin, Nathan, Omaha
Nemec, Chas. J., Omaha
Neuhaus, Geo., Omaha
Newman, James K., Omaha
Newell, Chas H., Omaha
Nilsson, J. R., Omaha
Nichaus, F. W., Omaha
Nolan, W. J., Omaha
Offerman, A. J., Omaha
O'Hearn, J. J., Omaha
Overgaard, A. P., Omaha
Owen, D. R., Omaha
Owen, Frank S., Omaha
Parks, A. L., Omaha
Parsons, Anthony, Valley
Patton, James M., Omaha
Peterson, Alfred O., Omaha
Pinto, A. Sherman, Omaha
Pollard, Chas. W., Omaha
Porter, Elmer R., Omaha
Potter, Geo. B., Omaha
Potts, Jno. B., Omaha
Powell, E. Willard, Omaha
Putman, Lynn J., Omaha
Prince, Norman C., Omaha
Prichard, Geo. W., Omaha
Pruner, A. C., Omaha
Pratt, Geo., Omaha
Pruner, W. H., Omaha
Pulver, J. E., Omaha
Quigley, D. T., Omaha
Quigley, Willard H., Omaha
Rance, Wm. T., Omaha
Ravitz, S. E., Omaha
Rice, Raymond, Omaha
Redfield, W. J., Omaha
Reed, Stanley G., Omaha
Reed, Wilson H., Omaha
Rich, Chas. O. N., Omaha
Riley, Bryan M., Omaha
Rix, Rudolph, Omaha
Roeder, Clyde, Omaha
Romanek, P., Omaha
Ross, W. L. Jr., Omaha
Ross, Wm. L., Omaha
Rubendal, Clarence, Omaha
Rubnitz, A. S., Omaha
Russum, B. C., Omaha
Sachs, Adolph, Omaha
Sage, E. C., Omaha
Sands, Robt. L., Omaha
Schalek, Alfred, Omaha
Schindel, Roscoe E., Omaha
Schleier, Frank J., Omaha
Schrock, Robt. D., Omaha
Schulte, H. von W., Omaha
Scott, F. W., Omaha
Sealey, H. J., Dumont, N. J.
Secord, D., Omaha
Servin, M. J., Omaha
Shearer, W. L., Omaha
Sher, Phillip, Omaha
Shramek, J. M., Omaha
Sedlacek, F. A., Omaha
Simanek, Geo. F., Omaha
Simmons, Eugene E., Omaha
Simpson, John E., Omaha
Sinamark, Andrew, Omaha
Sinamark, S. O., Omaha
Smernoff, Louis N., Omaha
Smith, Richard A., Omaha
Sommers, Andrew B., Omaha
Srb, A. F., Omaha
Stastny, Olga, Omaha
Stearns, R. J., Omaha
Steinberg, A. A., Omaha
Stokes, Arthur C., Omaha
Strickland, W. R., Omaha
Sucha, W. L., Omaha
Sullivan, J. P., Omaha
Sullivan, H. I., Omaha
Sullivan, K. O'C., Omaha
Summers, John E., Omaha
Sumney, H. C., Omaha
Swab, Chas. M., Omaha
Swanson, C. L. F., Omaha
Swoboda, F. J., Omaha
Taylor, Willis H., Omaha
Thompson, Chester Q., Omaha
Thompson, W. Y., Omaha
Towne, Solon R., Omaha
Thomsen, John H., Omaha
Tomlinson, C. C., Omaha
Torpy, Thos. W., Omaha
Traynor, R. L., Omaha
Tyler, Albert F., Omaha
Ulrich, Chas. F., Omaha
Updegraff, H. L., Omaha
Uren, Claude T., Omaha
Van Camp, Lee B., Omaha
Vance, John H., Omaha
Van Fleet, Edward A., Omaha
Waggener, Hewitt A., Omaha
Walker, W. H., Omaha
Walters, Chester H., Omaha
Wearne, Fred J., Omaha
Weinberg, Jos. A., Omaha

Wherry, Wm. P., Omaha
Whitcomb, Glen D., Omaha
Wigton, H. A., Omaha
Wood, Iwing C., Omaha
Wohl, M. G., Omaha
Young, G. Alexander, Omaha

OTOE

Barr, Arthur L., Nebraska City
Crudup, C. P., Nebraska City
Edmonds, Wm., Nebraska City
Fegers, G. W., Nebraska City
Gibbon, W. D., Dunbar
Ginn, A. P., Nebraska City
MacVean, M. M., Nebraska City
Raberr, Emil, Nebraska City
Schall, D. H., Otoe
Smith, I. B., Syracuse
Thompson, John, Syracuse
Weeks, Thomas, Talmadge
Wilson, S. S., Nebraska City
Yager, W. S., Nebraska City
Zimmer, Chas. G., Nebraska City

PAWNEE

Anderson, A. Byford, Pawnee City
Boyer, W. R., Pawnee City
Flory, Paul J., Pawnee City
Harman, L. D., Table Rock
Harvey, Henry M., Burchard
McCrea, E. L., Table Rock
Prendergast, J. F., Steinauer
Robertson, A. L., Butler

PHELPS

Bannister, W. B., Holdrege
Brewster, F. A., Holdrege
Case, E. L., Curtis
Clark, Geo. A., Elwood
Clark, Guy W., Bertrand
Long, Rachel W., Holdrege
Minich, Clarence E., Cambridge
Magill, J. L., Holdrege
Palmer, K. P., Holdrege
Robertson, Wm., Holdrege
Sanders, S. F., Holdrege
Shreck, W. A., Bertrand
Sundbury, P. A., Holdrege
Whitehead, E. I., Holdrege

PLATTE

Allenburger, C. A., Columbus
Bald, A. A., Platte Center
Campbell, Chas. H., Columbus
Cyphers, F. B., Duncan
Elston, Harry, Creston
Evans, Carroll D., Columbus
Evans, C. D. Jr., Columbus
Evans, J. N., Columbus
Evans, W. S., Columbus
James, Maurice C., Columbus
Koebbe, E. E., Columbus
Lemar, F. A., Humphrey
Lueschen, A. G., Columbus
Martyn, D. T. Jr., Columbus
Martyn, D. T. Sr., Columbus
Meyer, J. E., Columbus
Morrow, F. H., Columbus
Neumarker, W. R., Columbus
Tiesing, B., Columbus
Voss, L. C., Columbus
Walker, D. G., Lindsay
Edstrom, A. J., Concordia, Kan.

POLK

LeMar, C. S., Osceola
Malster, J. C., Stromsburg
Shaw, L. M., Osceola
Smith, D. J., Osceola

RED WILLOW

Bartholomew, Wm. S., Lebanon
De May, G. V., McCook
Easterday, E. M., McCook
Hill, J. Stanley, McCook
Hohl, Elizabeth, Los Angeles, Calif.
Kay, Z. L., McCook
Knox, W. E., McCook
MacKechnie, W. D., Indianola
Morgan, D. H., McCook
Reed, R. R., McCook
Ryan, M., Danbury
Willis, J. M., McCook

RICHARDSON

Andrews, G. M., Stella
Cowan, S. D., Falls City
Egermayer, Geo. W., Shubert
Fordyce, C. P., Falls City
Gandy, G. G., Humbolt
Gillispie, J. C., Falls City
Greene, J. M., Falls City
Hays, E. R., Falls City
Henderson, R. G., Falls City
Henkle, W. I., Barada
Hustead, C. L., Falls City
Lang, O. F., Falls City
McArdle, G. M., Salem
Meadler, C. A., Verdon
Miner, H. R., Falls City
Montgomery, A. W., Stella
Nelson, F. A., Dawson
Novak, C. E., Humbolt
Reneker, G. W., Falls City
Shepherd, J. C., Rulo
Shepherd, Wm., Rulo
Shook, W. E., Shubert
Smith, A. J., Salem
Waggoner, J. A., Humbolt
Wilson, M. L., Falls City

SALINE

Blattspieler, A. C., Tobias
Byers, J. C., Friend
Byrnes, M. R., Crete
Brenn, Chas. P., Western
Cerny, Joseph, Wilbur
Conrad, Alexander A., Crete
Cross, Guy B., Dewitt
Dodson, Porter F., Wilbur
Hamilton, F. T., Friend
Hein, Henry, Wilbur
Kalan, F. J., Wilbur
Pallett, W. H., Crete
Panter, Robt. C., Dorchester
Quirk, Howard W., Crete
Simacek, Joseph, Swanton
Stejskal, F. J., Crete

SAUNDERS

Baer, B. H., Ashland
Clark, B. H., Ashland
Dodd, C. L., Weston
Dewitt, C. H. Jr., Malmo
Hubenbeckey, J. C., Morse Bluffs
Kasper, J. E., Prague
Kirkpatrick, C. F., Ashland
Lauvetz, Jos. F., Wahoo
McCaw, F. W., Colon
von Mansfelde, A. S., Ashland
Noyes, Wm. W., Ceresco
Smith, John G., Wahoo
Spradling, F. L., Valparaiso
Tornholm, Frank, Wahoo
Way, C. W., Wahoo
Way, Frank E., Wahoo
Weber, Ernest O., Wahoo
Wright, Frank T., Ceresco

SCOTTS BLUFF

Beard, E. A., Morrill
Collins, F. M., Mitchell
Cooper, Albert Lloyd, Morrill
Faulk, Andrew J., Mitchell
Griggs, Earl E., Scottsbluff
Harvey, Walter Carlton, Gering
Hodnett, W. P., Scottsbluff
Johnston, G. F., Bridgeport
Mitchell, Edw. Jos., Scottsbluff
Plehn, F. W., Scottsbluff
Rasmussen, N. W., Scottsbluff
Ross, A. J. Jr., Minatare
Schrock, J. B., Scottsbluff
Stoops, J. N., Scottsbluff
Shike, Wm. Earle, Gering
Stewart, A. J., Mitchell
Townsend, A., Minatare
Vanderhoff, I. J., Scottsbluff
Vanderwyst, P. G. H., Scottsbluff
Welter, R. V., Bayard
Young, F. B., Gering
Watson, C. R., Mitchell
Zoerb, E. F., Scottsbluff

SEWARD

Clarke, H. D., Tamora
Cummings, H. B., Seward
DeOgny, Paul A., Milford
Hayes, Noah, Milford
Lee, L. H., Seward
Meisenbach, J. E., Staplehurst
Morrow, B. E., Seward
Morrow, Joseph, Seward
Muir, J. G., Milford
Nickum, D. C., Seward
Ragan, S. E., Seward
Sandusky, Wm., Seward
Wertman, H. J., Milford

THAYER

Anderson, August N., Belvidere
Bowles, E. Arthur, Hebron
Bowles, Loetta, Hebron
Decker, R. F., Byron
McGrew, F. A., Deshler
Morentford, F. A., Davenport
Mullikin, D. B., Chester
Newell, H. J., Alexandria
Panter, S. G. Jr., Hebron
Saylor, H. W., Bruning
Snowden, C. C., Davenport
Squires, U. H., Hebron
Stretton, H. H., Chester
Sweeney, E. E., Gilead
Taylor, G. R., Hebron
Wagner, Geo. L., Deshler
Westerhoff, J. G. W., Carleton

VALLEY

Barta, F. A., Ord
Clark, E. E., Burwell
Langrall, C. D. D. M. M. S., Arcadia
Lee, D. R., Arcadia
Miller, C. J., Ord
O'Neill, Sylvester H., Blue Hill
Osheroff, S. A., Ericson
Phillipson, J. A., North Loup
Weeks, Chas. W., Ord

WASHINGTON

Anderson, James B., Kennard
Cameron, A. J., Herman
Geesaman, E. S. B., Fort Calhoun
Hinchman, J. V., Blair
Langstaff, G. A., Blair
Murdock, R. J., Blair
Nielsen, Morris, Blair
Read, F. T., Centralia
Stewart, E. R., Blair

WEBSTER

Ambrose, A. L., Guide Rock
Cook, Henry, Red Cloud
Creighton, E. A., Red Cloud
Martin, Robt. S., Red Cloud
Reed, H. S., Guide Rock
Wegman, Wm., Blue Hill

YORK

Bell, H. O., York
Eckles, W. F., York
Bell, J. S., York
Hanna, E. B., York
Harris, S. O., Gresham
Hylton, W. N., Gresham
King, D. D., York
McKinley, J. C., York
Moore, O. M., York
Morris, F. S., McCook
Morrison, G. A., Bradshaw
Peterson, Wm. C., York
Plumb, J. N., York
Root, B. A., York
Snyder, F. G., York
Wegner, E. S., York

With over 125 representative branches in principal cities the American Optical Company stands out pre-eminently as the foremost and outstanding wholesale optical organization in the United States as well as in Nebraska.

WELLSWORTH
PRODUCTS
for Better Eyesight

Superior Optical Prescription Service

Artificial Eyes Microscopes
Lenses Frames Mountings
Surgical Instruments
Air Pumps and Compressors Sterilizers
Blood Pressure Instruments
Trial Cases Retinoscopes Ophthalmoscopes
Ophthalmometers Phoroptors
Chairs Stools Cabinets Charts

Catalogue and prescription supplies on request

American Optical Company
EXCLUSIVELY WHOLESALE
Aquila Court Bldg. Omaha

All prescription orders executed the same day as received.

GUINEA PIGS

Your Order Filled Promptly

W. J. Whitaker

5119 Nicholas Street

OMAHA NEBRASKA

Telephone Walnut 1748

FRACTURE OF THE NOSE

"Remember that fracture of the nose is really a lateral displacement of the two bones proper of the nose, and this has to be promptly corrected or it heals rapidly in a disfiguring position. The luxation is easily corrected when done early, but by the next day the secretions and edema impede this, and it is necessary to cocainize the interior of the nose and sustain the bones on each side with a stout tampon smeared with petrolatum. This holds the bones in place better than anything applied from the outside. The tampon is changed at the second or third day, which allows the nose to be modeled more perfectly. The reduction of the fracture is painful and far from easy when an interval of from two to seven days has elapsed, and by the end of the second week the outcome is uncertain."—Dr. Henry Dintenfass (Med. Stand.).

ANOTHER SEX PROBLEM SOLVED

Ethel (studying grammar): "Say, Reggie, if a man druggist is called a pharmacist, what would you call a woman druggist?"

Reggie: "A Pharmacister, of course."

8100
Independence
Road

Office
937 Rialto
Building

Home of The

G. WILSE ROBINSON SANITARIUM COMPANY
KANSAS CITY, MISSOURI

Dr. G. Wilse Robinson, Superintendent and Neuro-Psychiatrist
Dr. B. Landis Elliott, Resident Neuro-Psychiatrist

NERVOUS AND MENTAL DISEASES

ALCOHOLICS AND DRUG ADDICTS
(will be received)

The Sanitarium is located on a tract of twenty-five beautiful acres, in Kansas City, Missouri.

The Buildings are commodious and of very attractive architecture.

Rooms with private bath can be provided.

The treatment embraces all of those therapeutic agents which Medical Science has determined to be most beneficial in the restoration of such patients as are received.

Recreation and entertainment are important factors in the rehabilitation of nervous and mental cases.

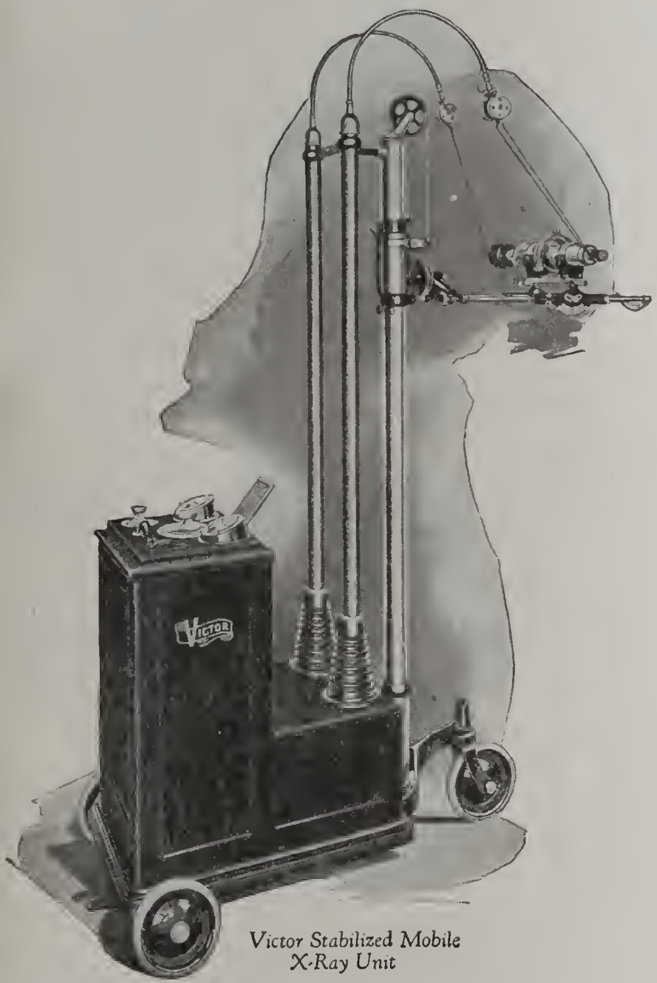
An indoor gymnasium, short golf course, tennis courts, croquet grounds, etc., will be available for the use of the patients.

The Sanitarium is twenty minutes drive from the Union Station and can be reached by automobile or the Kansas City-Independence Electric line from the Union Station or Sheffield Station, Kansas City, Missouri, or Independence, Missouri.

For further information communicate with the Superintendent—at office or sanitarium.

You can enhance the value of your own Journal by patronizing its advertisers.

A Compact, Yet Practical X-Ray Outfit for the Physician's Office



Victor Stabilized Mobile X-Ray Unit

Here is an outfit which has solved the problem for hundreds of physicians who desire compactness as one of the first requisites in an X-Ray outfit, without any sacrifice in the quality of radiographs produced, and combining simplicity and convenience in operation.

The Victor Stabilized Mobile X-Ray Unit is a complete, self-contained unit incorporating the Victor-Kearsley Stabilizer—*an exclusive Victor feature*—which standardizes technique and insures good radiographs consistently. This Stabilizer is one of the most important X-Ray developments in the last decade, having made possible the wider use of X-Rays by physicians, thru greatly simplified control and uniform results.

Note the large rubber-tired casters which make it a truly mobile outfit, easily shifted around the room.

Hospitals, too, are supplementing their stationary X-Ray equipment with this Mobile Unit, finding it ideal for bedside work in cases where the patient cannot be conveniently moved to the X-Ray laboratory.

What are your X-Ray requirements? We can help you meet them in the most practical way

VICTOR X-RAY CORPORATION, 236 South Robey Street, Chicago, Ill.

Territorial Sales and Service Stations:

Omaha: 1715 Dodge St.

VICTOR

As a General Antiseptic

in place of

TINCTURE OF IODINE

Try

Mercurochrome - 220 Soluble

2% Solution

It stains, it penetrates, and it furnishes a deposit of the germicidal agent in the desired field.

It does not burn, irritate or injure tissue in any way.

Hynson, Westcott & Dunning

BALTIMORE, MD.

SECONDARY RESPONSIBILITY OF THE NURSE

"The proper work of the trained nurse does not contemplate that she is in a position of primary responsibility. Her duty is to care for patients' needs under the physician. If she is to do more—to assume the physician's function — she should take the medical course. The things she has to do are simple things. The work she has to do in ordinary service does not require a high school training nor three years of hospital training. It needs young women of character and intelligence, of a sense of responsibility and of elementary education. Given such a woman, and the time required to teach her in the hospital the technic of the nursing craft is a small part of three years. The effort should be made to provide, as well as a certain number of the present order of nurses, a nurse of that sort in large number".
—W. A. Pusey.

ADDITION AND SUBTRACTION

Bings: "A woman had triplets and the next day she had twins—"

Bangs: "How's that?"

Bings: "One of 'em died!"—Ibid.

Trademark Registered **STORM** Trademark Registered

Binder and Abdominal Supporter

(PATENTED)

Trade Mark Reg.

Trade Mark Reg.

For Men, Women and Children

For Ptosis, Hernia, Pregnancy, Obesity, Relaxed Sacro-Iliac Articulations, Floating Kidney, High and Low Operations, etc.

Ask for 36-page Illustrated Folder.
Mail orders filled at Philadelphia only—within 24 hours.

Katherine L. Storm, M. D.
Originator, Patentee, Owner and Maker
1701 Diamond Street Philadelphia

EXTENSIVELY PRESCRIBED

Horlick's Malted Milk

The Original

It is uniform,
Safe and Reliable

EVERY ingredient of the best quality, and our superior facilities and experience as the originators insures satisfaction.

ADVOCATED extensively by the medical profession, over one-third of a century, in the prescribed feeding of infants, invalids and convalescents generally.

Avoid imitations *Samples prepaid*

Horlick's Malted Milk Co.
Racine, Wis.

ST. ELIZABETH'S HOSPITAL

Management: Sisters of St. Francis
11 & South Streets
LINCOLN, NEBRASKA

Departments of Medicine, Surgery, Obstetrics, Pediatrics, Orthopedics and Neurology
A Training School for Nurses is maintained in connection with the hospital

—send us your orders for

HARROWER'S ENDOCRINE PRODUCTS

◆

Price to Physicians 25% off List

Ample Stocks
Prompt Shipments

DONLEY STAHL Co.
DEPENDABLE SERVICE

THE PHYSICIAN'S SUPPLY HOUSE

Lincoln Nebr.

SYMPATHECTOMY FOR ANGINA PECTORIS

The two cases reported on by Mont R. Reid and Alfred Frielander, Cincinnati (Journal A. M. A., July 12, 1924), indicate that, in addition to relaxation of the coronary vessels, a factor in the relief of angina by sympathectomy is a diminution in the sensitiveness of the nerve endings in the heart. If this relief is due to an increased circulation of the heart muscle and a diminution in sensitiveness of the nerve endings in the heart, then there would appear to be ample justification for performing the operation in those cases in which coronary spasm is apparently the cause of the angina. However, if pain is a symptom of grave organic disturbance, then freedom from it may not be so desirable, for it would mean the removal of an important danger signal. It is important to regulate most carefully the lives of patients subjected to sympathectomy.

DIDN'T SELL WELL

"Has your brother been bothered long with acute indigestion?"

"Oh, no—not until th' other day when he forgot an' ate English mutton and Irish potatoes!"—Medical Pickwick.

Bottles — *White Enamel Furniture* — *Bandages*

We supply on Short Notice—

Upjohn's Pharmaceuticals
Lloyd's Specifics
Diphtheria Antitoxin
Small Pox Vaccine
and everything in Biologicals
Fischer Electrical Apparatus
Sorensen Suction Apparatus
Bausch & Lomb Microscopes
and accessories
Etc. Etc. Etc.

Rubber Goods — *Surgical Instruments*

KOSTKA DRUG CO.
PHYSICIANS' SUPPLIES
143 SO. 11. LINCOLN, NEB.

Cotton — *Pills*

We supply your needs for the coming year

MAUL BROS.
LINCOLN PRINTING COMPANY

Thank

Two words easy to say. Yes, we know them well and when used are said with an expression of gratitude or obligation.

You--

236 No. 13th Street, Lincoln, Nebr.

TREATMENT OF MIGRAINE

J. Lindsay Greig assuming weakness of the muscular apparatus of the stomach as the cause of migraine, recommends the following diet, which has had excellent results. Permitted are: Soaps, fish, eggs, bacon, bread and butter, toasts, marmelades, jam, tea, coffee, meat of any sort, potatoes, fruits, jellies, fruit juices, ice-cream, cream-tarts, milk puddings, tomatoes. Strickly forbidden: Cakes, biscuits, sweets, green vegetables (including beans and peas), carbonated drinks. In the first 2 weeks of the treatment hydrochloric acid after the main meals. If an aperient remedy is necessary, cascara sagrada. Patient should sleep in horizontal position and without pillow. (Br. Med. Jour.).

SOLID MAHOGANY

"Captain, I'll have to go to the doctor, I have a splinter in my finger."

"Ye ought to have more sense than to be scratching your head," was the caustic reply.

A raw apple eaten at night before retiring is a time-honored beauty prescription and undoubtedly makes for clearness of complexion by keeping the digestive tract clean.

The Creighton University
COLLEGE OF MEDICINE

The College of Medicine is an integral part of the University and is affiliated with the Creighton Memorial, St. Joseph's Hospital, an institution of 370 beds.

Entrance Requirements: A minimum of two years (60 semester hours) of college, including Biology, Physics, General and Organic Chemistry and French or German.

Combined Courses: Premedical course of two years is offered in the College of Arts and Sciences leading to the degree of B. S. at the end of the second year of the medical course. A premedical course of three years leading to the degree of B. A. after one year of medicine is strongly recommended.

As the number of students in each class is limited, early registration is advisable. Preference is accorded applicants, who present credits above the minimum requirements.

For bulletin and all other information regarding the medical college and internships at St. Joseph's Hospital address the Registrar,

CREIGHTON COLLEGE OF MEDICINE
14th & Davenport, Omaha, Nebraska.

THE THERAPEUTIC STATUS OF CAMPHOR-IN-OIL

Ignorance, inertia and error are foremost among the factors that militate against effective therapy at a time when therapeutic nihilism has gained a strong hold on many thoughtful physicians. Almost equally detrimental is the misplaced confidence that tradition or propoganda often engenders for certain drugs. Unwarranted hopes for pharmacologic potency not only lead to failure where a patient expects success, but also delay the opportunity to try something likely to be more efficacious; and thus sometimes the most favorable moment has passed. These considerations are prompted by the recent report of Marvin and Soifer[1] regarding the use of camphor-in-oil as a cardiac stimulant. Although the drug has received slight recognition in academic pharmacology, and at best an unenthusiastic reference in Useful Drugs, it is still employed widely in circulatory emergencies. When competent clinicians study its action in such cardiac stress as congestive heart failure and failure to secure evidence of any action on heart rate, respiration, blood pressure, vital capacity, or the general clinical condition in which digitalis is frequently promptly effective, there is surely justification for comment. Henceforth the burden of proof that camphor-in-oil has a rational place in the treatment of congestive heart failure rests with its advocates. All others may well hesitate to put their trust in a drug that seems to have given more promises than therapeutic performances.—Jour. A. M. A., Aug. 2, 1924.

---

[1] Marvin, H. M., and Soifer, J. D.: The value of Camphor-in-Oil as a Cardiac Stimulant, J. A. M. A. 83:94 (July 12) 1924.

FAILURE IN FRACTURES

I contend that it is not immobilization that causes stiffness of joints near fractures, but failure to immobilize; not splinting that causes joints to be stiff in a fractured limb, but poor splinting. It is not keeping the joint quiet that impairs its function afterwards, but putting on a splint or a traction device that permits, instead of preventing, constant movement and irritation. It is this poor splinting or poor cast that permits the development of arthritis as a result of the injury at the time of the fracture and repeated traumatisms afterwards.—Dr. H. Winnett Orr (Med. Herald).

ANNOUNCEMENTS

A Practical Course in Standardized Physiotherapy, under auspices of Biophysical Research Dept. of Victor X-Ray Corporation, is now available to physicians. Offers a highly practical knowledge of all the fundamental principles that go to make up the standards of modern scientific physiotherapeutic work. Course requires one week's time. For further information apply to J. F. Wainwright, Registrar, 236 So. Robey St., Chicago, Ill.

SITUATIONS WANTED

WANTED: Salaried Appointments for Class A Physicians in all branches of the Medical Profession. Let us put you in touch with the best man for your opening. Our nation-wide connections enable us to give superior service. Aznoe's National Physicians' Exchange, 30 North Michigan, Chicago. Established 1896. Member The Chicago Association of Commerce.

Nurses' Official Directory
of LINCOLN
Mrs. Martha Taylor, Registrar
Graduate Registered Nurses
601 So. 32 St. Phone F 2329

Omaha Brace Shop
At the service of the Profession.
under supervision of
Doctors Lord, Schrock & Johnson
501 Aquila Court
Phone: ATlantic 5449
Braces, Splints, Foot Plates, Corsets, etc.

Radium for Rent

Radium loaned at very reasonable rates, and detailed information furnished as how to apply it, to physicians desiring to treat their own patients with Radium. Send for descriptive literature describing our *Radium Rental Service* and the pamphlet "Indications for Radium Therapy".

Quincy X-Ray and Radium Laboratories
731 Hampshire Street Quincy, Ill.

Nurses' Club of Omaha
and Registry

Graduated Registered Nurses

OPEN DAY AND NIGHT

NELLE A. PERRY, Registrar
Phone Web. 5206 1124 No. 18th St.

SAVE MONEY ON

YOUR X-RAY SUPPLIES

Get Our Price List and Discounts on Quantities Before You Purchase.

HUNDREDS OF DOCTORS FIND WE SAVE THEM FROM 10% TO 25% ON X-RAY LABORATORY COSTS

AMONG THE MANY ARTICLES SOLD ARE

X-RAY FILMS. Duplitized or dental—all standard sizes. Eastman, Super Speed or Agfa films. Heavy discounts on standard package lots. X-Agraph, Eastman and Foster metal backed dental films. Fast or slow emulsion.

X-RAY PLATES. Paragon Brand for finest work.

POTTER BUCKY DIAPHRAGM. Cuts out secondary radiation insuring finer detail and contrast. Price $250.

BARIUM SULPHATE. For stomach work. Finest grade. Low price. Special price on 100 pound lots.

COOLIDGE X-RAY TUBES. 5 styles. 10 or 30 milliamp.—Radiator (small bulb), or broad, medium or fine focus, large bulb. Lead glass shields for radiator type.

DEVELOPING TANKS. 4, 5, or 6 compartment stone, will end your dark-room troubles. Five sizes of enameled steel tanks. Shipments from Boston, Brooklyn, Chicago or Virginia.

DENTAL FILM MOUNTS. Black or gray cardboard with celluloid window or all celluloid type, one to fourteen film openings. Special list and samples on request. Either stock styles or imprinted with name, address, etc.

DEVELOPER CHEMICALS. In bulk or ½, 1, 2 and 5 gallon sizes. Paragon, Eastman or X-Ograph.

INTENSIFYING SCREENS. Sweetbriar, Patterson or T. E. screens alone or mounted in cassettes; reduced exposure from 6 to 18 times. All-metal cassettes several makes.

LEADED GLOVES AND APRONS. High grade, low price.

FILING ENVELOPES with printed x-ray form. Special price on 2,000.

PARAGON X-RAY PLATES

If You Have a Machine Get Your Name on Our Mailing List.

GEO. W. BRADY & CO.
784 So. Western Ave., Chicago

The
Huse Publishing Company

Printers
Book Binders
Office Furniture
Office Supplies
Stationers

Norfolk - Nebraska

CLECO

Pep-tonic Lax Capsules
$3.00 per thousand

CLECO

THE W. G. CLEVELAND CO.
M. H. Cowell, Pres.
Surgical Supplies and Drugs
1410 Harney Street
Omaha, Nebraska

CLECO

Stein-o-Lite
$12.00
Stand $12.00 — Arm $4.25
Cotton — Special, 42c lb.

CLECO

An Invitation to Physicians

Physicians in good standing are cordially invited to visit the Battle Creek Sanitarium and Hospital at any time for observation and study, or for rest and treatment.

Special clinics for visiting physicians are conducted in connection with the Hospital, Dispensary and various laboratories.

Physicians in good standing are always welcome as guests, and accommodations for those who desire to make a prolonged stay are furnished at a moderate rate. No charge is made to physicians for regular medical examination or treatment. Special rates for treatment and medical attention are also granted dependent members of the physician's family.

An illustrated booklet telling of the Origin, Purposes and Methods of the institution, a copy of the current "MEDICAL BULLETIN", and announcements of clinics, will be sent free upon request.

The Battle Creek Sanitarium
Room 101
BATTLE CREEK MICHIGAN

INDICATIONS FOR VENESECTION

Dupaut reports on several very interesting observations with regard to indications for venesection. Two of his patients who, apart from slight albuminuria, showed no organic trouble, fell suddenly into a state of coma with death rales, which condition lasted for 24 hours. A copious blood-letting (600 gms.), however, quickly caused the threatening symptoms to disappear. The writer has had very good results in three cases of delirium tremens. One case was that of a potator strenuus (methyl alcohol) who suffered from severe chronic poisoning. The venesection had an immediately soothing effect, which is all the more remarkable as all means tried up to that time had completely failed. In the same way immediate calm followed on venesection in delirium tremens due to ether narcosis. The writer further refers to the excellent effects of abundant blood-letting in coma resulting from mushroom-poisoning (Amanita). Liberal venesection, repeated if necessary several times, is indicated in all cases of coma or delirium, regardless of whether they result from a disease of endogenic or exogenic origin. (Paris medic. No. 15, 1924).

WHEN IN OMAHA
STOP WITH US
Hotel Conant
Hotel Sanford
Hotel Henshaw

Our reputation of 20 years fair dealing is back of these hotels. Guests may stop at any one of them with the assurance of receiving honest value and courteous treatment.

CONANT HOTEL COMPANY

10th Year of Experience Rates Reasonable
Strictly Modern Service.

Private HOSPITAL and Maternity Home
2954 Apple Street
LINCOLN, NEBRASKA

Phone B4104 MRS. H. T. ROEDER, Superintendent

Omaha Maternity Hospital
No. 2204 St. Mary's Avenue
OMAHA - NEBRASKA
Telephone AT6345 *REGISTERED NURSES*

Attend the Imel Special courses on Physio-Therapeutics

Given by E. S. Imel, M. D.
El Paso, Texas

Dr. Imel has become successful, widely known and authoritatively quoted upon his PHYSIO-THERAPEUTIC work, and now consents to devote a considerable portion of his time to the teaching and furthering of Medical and Surgical Diathermy, Auto-Condensation, Electro Coagulation, Sine Wave and Galvanic Current and Quartz Light Therapy.

The Imel Courses include Lectures and Practical Demonstrations, but because of limited time and restricted number of cities visited, it will be possible to enroll only a limited number of physicians.

The fee for the Imel courses is $25, of which $10 should accompany application and balance paid at time of enrollment.

In mailing your application please state in which city you prefer to take the courses.

A thorough knowledge of Physio-Therapeutics is today almost indispensible to the physician and Dr. Imel presents his findings and methods in such a clear, concise and readily understood manner that physicians in most cases lose no time in converting their newly added knowledge of the subject into remunerative treatments.

Physio-Therapy Spells Advancement

Sioux City, Iowa,
January 12th to 16th inclusive.

Des Moines, Iowa,
January 19th to 23rd inclusive.

Kansas City, Missouri,
January 26th to 30th inclusive.

Wichita, Kansas,
February 2nd to 6th inclusive.

Omaha, Nebraska,
February 9th to 13th inclusive.

Denver, Colorado,
February 16th to 20th inclusive.

Salt Lake City, Utah, February 23rd to 27th inclusive

Only M. D.'s In Good Standing or Their
Assistants will be Enrolled

Kindly mail your application at once addressing your communication to

MAGNUSON X-RAY COMPANY

1118 Farnam St.
Omaha, Nebraska

The
Lord Lister
Hospital

A General Open Hospital, Completely Equipped in All Departments.

Lord Lister Hospital Staff

President:
E. C. Henry, M. D.

Secretary:
Howard L. Updegraff, M. D.

Treasurer:
S. Edw. Isacson, Ph. D.

Surgery:
E. C. Henry, M. D.
L. A. Dermody, M. D.
Howard L. Updegraff, M. D.

Nervous and Mental Diseases:
Ernest Kelley, M. D.

Dermatology & Urology:
Edgar G. Barnhart, M. D.

Physiotherapy:
H. A. Waggener, M. D.

Orthopedics:
L. A. Dermody, M. D.

Obstetrics and Gynecology:
Roy A. Dodge, M. D.
Frederick J. Werne, M. D.
A. S. Pinto, M. D.

Eye, Ear, Nose and Throat:
L. C. Bleick, M. D.
J. Calvin Davis, Jr., M. D.

Roentgenology:
R. W. Fouts, M. D.

Pathology:
S. Edw. Isacson, Ph. D.

For Particulars Address Superintendent, Lord Lister Hospital, 26th & Dewey Ave.,
Omaha, Neb.

Nurses'
Central Club and
Registry
of the Nebraska State Nurses' Association
2420 HARNEY ST.,
Phone At. 9387
Graduate Registered Nurse Service Only

Advertising Illustrations
Retouching, Half-Tones
Zinc Etchings
Process & Ben Day Color
Engravings, Electrotypes
BAKER BROS. ENGRAVING Co
12TH AND HARNEY STS. OMAHA
TELEPHONE
ATlantic 4626

THE DOCTOR'S EPITAPH

By G. H. C.

The Doctor Sleeps! No more at Pain's behest
Shall he relinquish his much needed rest;
No more his skillful hand and tender heart
Shall give to some new life a proper start.

The Doctor Sleeps! His fighting days are done,
But hundreds live because of bouts he won,
And, generations hence, those will draw breath
Who would not Be had he not vanquished Death!

The Doctor Sleeps! Might we his deeds recall
His name would blaze in Fame's enmarbled Hall
But, serving modestly through life, it now seems best
To merely write, "His Work Survives," and let him rest!

—Amer. Journal of Clinical Medicine.

Joshaway Crabapple says:

"The fellow who brags that he never spends a cent for repairs on his car generally has most of his gasoline charged, too".

I. Surgery and Gynecology
Chief of Section
A. F. Jonas, M. D.
Associates—
C. C. Morrison, M. D.
C. R. Kennedy, M. D.
J. R. Nilsson, M. D.
Orthopedics
J. P. Lord, M. D.
Assistants in Surgery
Glenn Miller, M. D.
R. J. Stearns, M. D.
Assistant in Orthopedics
Robert D. Schrock, M. D.
II. Internal Medicine
Chief of Section,
W. O. Bridges, M. D.
Associates—
E. L. Bridges, M. D.
Rodney W. Bliss, M. D.
Asst., R. Allyn Moser, M. D.
III. Eye, Ear, Nose and Throat
Chief of Service,
Harold Gifford, M. D.
Associates—
J. M. Patton, M. D.
W. D. Callfas, M. D.
Asst., Sanford Gifford, M. D.

IV. Pediatrics
Chief of Service,
H. M. McClanahan, M. D.
Associates—
Clyde Moore, M. D.
H. B. Hamilton, M. D.
J. A. Henske, M. D.
V. Obstetrics
Chief Emeritus,
J. C. Moore, M. D.
Chief of Service,
W. H. Taylor, M. D.
Associate—
Earl C. Sage, M. D.
VI. Neuropsychiatry
Chief of Service,
G. A. Young, M. D.
Associate—
H. Wigton, M. D.
VII. Dermatology
Alfred Schalek, M. D.
VIII. Roentgenology
C. R. Kennedy, M. D.
IX. Pathology
W. B. Moody, M. D.

Address the Superintendent

Nebraska Methodist Episcopal Hospital

Corner Cuming and Thirty-sixth Sts. **Omaha, Neb.**

"Those who sleep on the job of life will some day wake up to the fact that they have done nothing."

WANTED: Locum tenens in a partnership with opportunity for permanent position and ultimate partnership. General practice. Recent graduate preferred. Dr. C. H. Breuer, 201 Security Mutual Building, Lincoln, Nebraska.

Dear Doctor:

Dr. Quayle Sanitarium of Madison, Ohio, is sending out an adv. to several State Medical Journals. This is a quack concern, report of which will be found in the Jan. 27, 1923 issue of the Journal A. M. A.

The Mattison Trading Company is also sending out copy to several Journals for a full page advertisement on "Alkalithia". In 1919 this product was declared inadmissible to N. & N. R. because the claims made on the label and the circular accompanying the trade package lead the public to its detriment to depend on this preparation; and because the therapeutic claims are unwarranted.

Yours very truly,
COOPERATIVE MEDICAL ADV. BUREAU.

We supply your needs for the coming year

MAUL BROS.
LINCOLN PRINTING COMPANY

Thank

Two words easy to say. Yes, we know them well and when used are said with an expression of gratitude or obligation.

You--

236 No. 13th Street, Lincoln, Nebr.

St. Elizabeth's Hospital and School of Nursing

SISTERS OF ST. FRANCIS

Eleventh & South Sts. **Lincoln, Nebraska**

Sister M. Hedwig, Superioress
Sister M. Edwarda, Supt. Training School
Edmund G. Zimmerer, M. D., Medical Director.

Department of Surgery
Attending Surgeons
A. I. McKinnon, M. D., F. A. C. S.
F. B. Hollenbeck, M. D., F. A. C. S.
E. B. Finney, M. D., F. A. C. S.
J. S. Welch, M. D., F. A. C. S.
D. C. Hilton, M. D., F. A. C. S.
K. S. J. Hohlen, M. D., F. A. C. S.

Orthopedic Surgeon
H. W. Orr, M. D., F. A. C. S.

Gynecologists
F. A. Graham, M. D.
A. W. Graham, M. D.

Eye, Ear, Nose and Throat Attending
Fred. F. Teal, M. D.
S. G. Zemer, M. D.

Associate in Eye, Ear, Nose and Throat
J. M. Woodward, M. D.

E. B. Brooks, M. D.

Obstetricians
W. C. Becker, M. D.
S. O. Reese, M. D.

Urologist
Everett E. Angle, M. D.

Oral Surgeon
T. A. Trumble, D. D. S.

Associate in General Surgery
C. C. Johnson, M. D., F. A. C. S.
Chas. Arnold, M. D.
C. C. Hickman, M. D.
T. F. McCarthy, M. D.

Radiologist
Carl Kail, M. D.

Department of Medicine
Attending Physicians
H. J. Lehnhoff, M. D.
E. G. Zimmerer, M. D.
Harry Taylor, M. D.

George W. Covey, M. D.
W. F. Slattery, M. D.

Pediatrician
W. C. Colburn, M. D.

Neurologist
B. F. Williams, M. D.

Dermatologist
E. J. Angle, M. D.

Associate in Medicine
E. R. Ryerson, M. D.
B. A. Finkle, M. D.
E. E. Rider, M. D.

Associate in Pediatrics
E. V. Wiedman, M. D.

Consultants
A. R. Mitchell, M. D., F. A. C. S.
W. L. Dayton, M. D.
E. W. Rowe, M. D.

Resident Physician
Harold Van Hoose, M. D.

BOLEN

Abdominal Supporters and Binders
Elastic Hosiery, Laced Linen Mesh Stockings, etc.

PATENTED

For General Support

Supporters for every purpose, Enteroptosis, Nephroptosis, Obesity, Post-Operative, Hernia, Pregnancy, Sacro-Iliac, etc.

Special Attention Given to High Operations

Everything made to your order and orders filled within 48 hours after they reach our office.

WRITE FOR DESCRIPTIVE LITERATURE

BOLEN MANUFACTURING COMPANY
1712 Dodge Street **Omaha, Nebraska**

ROSENOW'S SERUM IN PREVENTION OF PARALYSIS IN ANTERIOR POLIOMYELITIS

During an epidemic of poliomyelitis in Omaha, Floyd Clarke and Andrew G. Dow (Journal A. M. A., Aug. 9, 1924) has seventeen cases. All the patients received one or more injections of Rosenow's serum. In every instance when they were able to see the cases soon after onset, and an early diagnosis was possible, recovery was complete without paralysis.

DOUBTLESS

A gentleman of a very excitable and emotional nature had the misfortune to lose his third wife. He took the affliction very much to heart, and at the grave was so overcome that he fainted. His friends gathered around him and were fearful for his life. Among them was a German who spoke English brokenly. He stooped down and felt the gentleman's pulse, and, looking up, said: "He's all right; he'll re-wive."—Clipping.

DIABETES

Diabetes is believed to be a disease of fat people. It is said that under fifty, only one diabetic in ten is thin.

The Creighton University
COLLEGE OF MEDICINE

The College of Medicine is an integral part of the University and is affiliated with the Creighton Memorial, St. Joseph's Hospital, an institution of 370 beds.

Entrance Requirements: A minimum of two years (60 semester hours) of college, including Biology, Physics, General and Organic Chemistry and French or German.

Combined Courses: Premedical course of two years is offered in the College of Arts and Sciences leading to the degree of B. S. at the end of the second year of the medical course. A premedical course of three years leading to the degree of B. A. after one year of medicine is strongly recommended.

As the number of students in each class is limited, early registration is advisable. Preference is accorded applicants, who present credits above the minimum requirements.

For bulletin and all other information regarding the medical college and internships at St. Joseph's Hospital address the Registrar,

CREIGHTON COLLEGE OF MEDICINE
14th & Davenport, Omaha, Nebraska.

Physiotherapy Clinic
under supervision of Doctors Lord, Schrock & Johnson
Miss Mary Potts, Physiotherapist in charge
Services available to the Profession.
479 Aquila Court Omaha, Neb. Phone: JAckson 0033

Kessler School of Lip-Reading for Deafened Adults.
Private lessons. Conversation classes for application work. Practice department. Choice of methods. School open throughout the year. Write for particulars.
Emma B. Kessler, A. B.
203 North 20th Street. Omaha, Nebraska.

INFANT FOODS

In prescribing infant foods it is worth remembering that rice is an astringent and farina a laxative.—Med. Summary.

With the cost of living falling under reconstruction pressure, a physician inquires, will medical fees have to go back to a prewar level? Emphatically No! For fifty years prior to the war, the price of food, clothes and everything else has been steadily advancing out of all proportion to the increase in medical fees. The vast majority of old practitioners charged no more in 1914 than they did thirty or forty years before. Until soaring war prices wedged the doctor out of the economic rut into which he had fallen and forced him to raise fees in order to live, he hesitated to do what all other men had been consistently doing for half a century. Now that he has the higher fee, let him keep it. Even on its present basis, medical service is still the cheapest professional service on earth and for the rank and file of practitioners the least rewarded.

—Anonymous.

8100
Independence
Road

Office
937 Rialto
Building

Home of The
G. WILSE ROBINSON SANITARIUM COMPANY
KANSAS CITY, MISSOURI
Dr. G. Wilse Robinson, Superintendent and Neuro-Psychiatrist
Dr. B. Landis Elliott, Resident Neuro-Psychiatrist
NERVOUS AND MENTAL DISEASES
ALCOHOLICS AND DRUG ADDICTS
(will be received)

The Sanitarium is located on a tract of twenty-five beautiful acres, in Kansas City, Missouri.
The Buildings are commodious and of very attractive architecture.
Rooms with private bath can be provided.
The treatment embraces all of those therapeutic agents which Medical Science has determined to be most beneficial in the restoration of such patients as are received.
Recreation and entertainment are important factors in the rehabilitation of nervous and mental cases.
An indoor gymnasium, short golf course, tennis courts, croquet grounds, etc., will be available for the use of the patients.
The Sanitarium is twenty minutes drive from the Union Station and can be reached by automobile or the Kansas City-Independence Electric line from the Union Station or Sheffield Station, Kansas City, Missouri, or Independence, Missouri.
For further information communicate with the Superintendent—at office or sanitarium.

GASTRON

An aqueous-acid-glycerin extract of the entire mucosa of the fresh stomach, including the pyloric, containing the peptic enzymes—proteolytic and milk-curdling, the activated principles and naturally associated soluble organic and inorganic constituents.

GASTRON is a stable, potent fluid, free from alcohol and free from sugar, with an acidity approximately of 0.25% absolute hydrochloric acid, loosely bound to protein, and twenty-five per cent pure glycerin.

GASTRON is put up in 6 oz. unlettered bottles, without literature.

Fairchild Bros. & Foster
New York

FRESH MATERIALS

PERFECTED PROCESSES

PARATHYROID

Powder and Tablets 1-20, 1-10 Grain

—— and ——

Parathyroid and Calcium Tablets

1 - 20 Grain Parathyroid
2½ Grain Calcium Lactate

Parathyroid preparations are indicated in Paralysis Agitans, Tetany, Indolent Ulcers and lesions that refuse to heal.

These parathyroid products are carefully made from fresh normal glands of young cattle.

Pituitary Liquid, standardized, in ampoules, surgical 1 c. c. obstetrical ½ c. c. Premier preparation of Posterior Pituitary.

Anterior Pituitary powder, 2 and 5 grain tablets. Pituitary whole gland, powder 1 and 2 grain tablets. Posterior Pituitary, powder and 1-10 grain tablets.

Literature for Physicians

ARMOUR AND COMPANY
CHICAGO

PHARMACEUTICAL PRODUCTS

James Y. Simpson, M. D., Supt. Hermon S. Major, M. D., Medical Director

SIMPSON-MAJOR SANITARIUM

3100 Euclid Avenue Kansas City, Missouri

Nervous Diseases

Selected Mental Cases

Alcohol Drug and Tobacco Addiction

Electricity
Heat
Water
Light
Exercise
Massage
Rest
Diet
Medicine

Beautifully Situated in a pleasant residence section of the city. Fully equipped and well heated. All pleasant outside rooms. Large lawn and open and closed porches for exercises. Experienced and humane attendants. Liberal, nourishing diet. Resident physician in attendance day and night.

Dr. Michael G. Wohl's Laboratory of Clinical Pathology

517-18 CITY NAT'L BK. BLDG.,
Omaha, Nebr.

MERCY HOSPITAL
Council Bluffs, Ia.

Chemical, Microscopical, Bacteriological and Metabolic Determinations.

WAKEFUL FEATURE

Mother—"Is daddy asleep?"

Betty—"Yes, mother—all except his nose."
—London Humorist.

Nowadays the reduction quacks are living on the fat of the land.—Asheville Times.

Scientists say there is no life on the moon. Perhaps the moonshine has killed them all.—Youngstown Vindicator.

As a means of boosting the mortality rate the appendix has long since given place to the accelerator.—Birmingham News.

When it comes to solving the world's problems, perspiration makes the best solvent we can think of.—San Francisco Chronicle.

Who ever imagined that the time would come when the pacifists would be doing the most of the fighting?—Boston Shoe and Leather Reporter.

Modern-day alienists are creating the impression that to be insane is not really a reflection upon one's intelligence.—Birmingham Age-Herald.

IMMANUEL HOSPITAL

34TH AND MEREDITH AVENUE
Phone Kenwood 1522
OMAHA, NEBR.

REV. EMIL CHINLUND, S. T. D.
Superintendent

SISTER FRIDA THDR, R. N.
Supt. of Nurses

SURGICAL STAFF

B. B. Davis, M. D.	Surgeon in Chief
C. A. Hull, M. D.	Surgeon
Jno. R. Nilsson, M. D.	Surgeon
Herbert H. Davis, M. D.	Surgeon
F. S. Dwens.M. D.	Eye and Ear
A. B. Lindquist, M. D.	Eye and Ear
Clarence Rubendall, M. D.	Eye and Ear
D. R. Dwen, M. D.	Eye and Ear
J. Jay Keegan, M. D.	Neurological Surgeon
Louis E. Moon	Proctologist
A. Hugh Hipple, D. D. S., M. D. S.	Dentist
A. F. Tyler, M. D.	X-Rayologist
J. R. Blackman, M. D.	X-Rayologist

MEDICAL STAFF

W. F. Milroy, M. D.	Consult Phys.
Wilson Drton Bridges, M. D.	Consult Phys.
H. M. McClanahan, M. D.	Consult Phys.
J. H. Vance, M. D.	Attend. Phys.
B. W. Christie, M. D.	Attend. Phys.
Julius Johnson, M. D.	Attend. Phys.
Geo. P. Pratt, M. D.	Attend. Phys.
G. W. Pritchard, M. D.	Attend. Phys.
E. W. Bantin, M. D.	Attend Phys.
E. T. Manning, M. D.	Attend. Phys., Pathologist
H. A. Wigton, M. D.	Nervous and Mental Diseases
Alfred Schalek, M. D.	Skin-Diseases
C. W. Pollard, M. D.	Obstertrician

POST GRADUATE COURSES
In All Branches for
PHYSICIANS AND SURGEONS
LABORATORY AND X-RAY
Training for PHYSICIANS and TECHNICIANS
Graded Courses in
EYE, EAR, NOSE AND THROAT
For further information address
POST GRADUATE HOSPITAL AND MEDICAL SCHOOL
2400 S. Dearborn St. Chicago, Illinois

BAD SMELL FROM THE MOUTH—TREATMENT

Viau recommends the following gargle:

R. Acidi salycilici	2.0	gm.
Alcohol	100.0	"
Sacchari		
Sod. hydrocarbonici ana	1.0	"

S. 10 drops in a glass of water.

(Il Policlinico).

CONSTIPATION WITH OBESITY—TREATMENT

R. Sod. sulph.	30	gm.
" citrici	20.0	"
" phosphorici	10.0	"

M. F. pulvis. S. 1 teaspoonful in a cup of tea in the morning.

(Il Policlinico).

ONE WAY OR ANOTHER

On a recent trip made by a liner from Glasgow to New York more than three-quarters of the passengers bore names beginning with Mac. In spite of Prohibition, America seems to be absorbing plenty of Scotch.—London Opinion.

Joshaway Crabapple says: "Exercise doesn't always increase the size of the muscle. Look at the tongue".

Radium for Rent

Radium loaned at very reasonable rates, and detailed information furnished as how to apply it, to physicians desiring to treat their own patients with Radium. Send for descriptive literature describing our *Radium Rental Service* and the pamphlet "Indications for Radium Therapy".

Quincy X-Ray and Radium Laboratories
731 Hampshire Street Quincy, Ill.

Nurses' Club of Omaha
and Registry
Graduated Registered Nurses
OPEN DAY AND NIGHT
NELLE A. PERRY, Registrar
Phone Web. 5206 1124 No. 18th St.

As a General Antiseptic
in place of
TINCTURE OF IODINE

Try

Mercurochrome - 220 Soluble
2% Solution

It stains, it penetrates, and it furnishes a deposit of the germicidal agent in the desired field.

It does not burn, irritate or injure tissue in any way.

Hynson, Westcott & Dunning
BALTIMORE, MD.

The
Huse Publishing
Company

Printers
Book Binders
Office Furniture
Office Supplies
Stationers

Norfolk - Nebraska

An Invitation to Physicians

Physicians in good standing are cordially invited to visit the Battle Creek Sanitarium and Hospital at any time for observation and study, or for rest and treatment.

Special clinics for visiting physicians are conducted in connection with the Hospital, Dispensary and various laboratories.

Physicians in good standing are always welcome as guests, and accommodations for those who desire to make a prolonged stay are furnished at a moderate rate. No charge is made to physicians for regular medical examination or treatment. Special rates for treatment and medical attention are also granted dependent members of the physician's family.

An illustrated booklet telling of the Origin, Purposes and Methods of the institution, a copy of the current "MEDICAL BULLETIN", and announcements of clinics, will be sent free upon request.

The Battle Creek Sanitarium
Room 101
BATTLE CREEK MICHIGAN

SIZE OF THE NORMAL HEART

A. E. Fossier, New Orleans (Journal A. M. A., June 21, 1924) has found that the normal heart corresponds invariably to the size of the fist of the individual when normal. This correlation of the clenched fist and the normal heart is constant and is the only practical determinant of its normality. The slightest variation in its size is recognized. Radiology has not furnished a basis for the determination of the normality of the heart's size. Percussion is of greater value in delimiting the cardiac area. The linear dimensions of the transverse diameter of the heart corresponds to a line drawn from the juncture of the inner side of the right hand and the wrist, and ending at the middle point of the fourth finger.

INTERTRIGO OF INFANTS — UROTROPIN

Simchen (Graz) recommends for the treatment of eczema intertrigo and erythema gluteale the internal administration of 0.2—0.25 gm. urotropin 3—4 times a day, which prevents the ammoniacal disintegration of the urine, and thus cures these "urogenic affections of the skin" within 3—14 days, without any other treatment. (Arch. f. Kinderh).

Bottles
Bandages

White Enamel Furniture

We supply on Short Notice—

Upjohn's Pharmaceuticals
Lloyd's Specifics
Diphtheria Antitoxin
Biologicals
Harrower Products
Genuine Luer Syringes
Sorensen Suction Apparatus
Bausch & Lomb Microscopes
and accessories
Etc. Etc. Etc.

Rubber Goods
Surgical Instruments

KOSTKA DRUG CO.
PHYSICIANS' SUPPLIES
143 SO. 11. LINCOLN, NEB.

Cotton
Pills

ASTRINGENT SKIN LOTION

Phenol	1 dr.
Zinc oxide	2 drs.
Prepared calamine	1 dr.
Glycerine	2 drs.
Rose water	4 drs.
Milk of magnesia, to make	4 ozs.

Apply locally by swabbing with pad of absorbent cotton.

COLD COMPRESS

A very large compress reaching from the clavicle to the pubis, wrung out of ice water pinned around any fever patient with a hot skin, and covered with a dry towel and changed once every hour, is far better, safer and easier for controlling temperature than any other method I have used, and should be used much more generally.—Torbett in Med. World.

I now am never late to work.

How come; new alarm clock?

Nope! When the baby goes to sleep I know it's time to get up.

"Refuse to fret over anything until you have at least discovered it is to be a matter of vital importance."

Radium for Rent

Radium loaned at very reasonable rates, and detailed information furnished as how to apply it, to physicians desiring to treat their own patients with Radium. Send for descriptive literature describing our *Radium Rental Service* and the pamphlet "Indications for Radium Therapy".

Quincy X-Ray and Radium Laboratories
"Devoted Exclusively to Radiology in all its Branches"
731 Hampshire Street Quincy, Ill.

Nurses' Club of Omaha
and Registry

Graduated Registered Nurses
OPEN DAY AND NIGHT

NELLE A. PERRY, Registrar
Phone Web. 5206 1124 No. 18th St.

As a General Antiseptic
in place of
TINCTURE OF IODINE

Try

Mercurochrome - 220 Soluble
2% Solution

It stains, it penetrates, and it furnishes a deposit of the germicidal agent in the desired field.

It does not burn, irritate or injure tissue in any way.

Hynson, Westcott & Dunning
BALTIMORE, MD.

The
Huse Publishing Company

Printers
Book Binders
Office Furniture
Office Supplies
Stationers

Norfolk - Nebraska

An Invitation to Physicians

Physicians in good standing are cordially invited to visit the Battle Creek Sanitarium and Hospital at any time for observation and study, or for rest and treatment.

Special clinics for visiting physicians are conducted in connection with the Hospital, Dispensary and various laboratories.

Physicians in good standing are always welcome as guests, and accommodations for those who desire to make a prolonged stay are furnished at a moderate rate. No charge is made to physicians for regular medical examination or treatment. Special rates for treatment and medical attention are also granted dependent members of the physician's family.

An illustrated booklet telling of the Origin, Purposes and Methods of the institution, a copy of the current "MEDICAL BULLETIN", and announcements of clinics, will be sent free upon request.

The Battle Creek Sanitarium
Room 101
BATTLE CREEK MICHIGAN

THE AMERICAN BOARD OF OTOLARYNGOLOGY

The American Board of Otolaryngology was organized in Chicago on November 10. The following constitute the board of directors: Drs. Harris P. Mosher, Boston, president; Frank R. Spencer, Boulder, Colo., vice president; Hanau W. Loeb, St. Louis, secretary and treasurer; Thomas E. Carmody, Denver; Joseph C. Beck, Chicago; Thomas H. Halsted, Syracuse, N. Y.; Robert C. Lynch, New Orleans; Burt R. Shurly, Detroit; Ross H. Skillern, Philadelphia; William P. Wherry, Omaha. The office of the Board is at 1402 South Grand Boulevard, St. Louis, Missouri. The board comprises representatives of the five national otolaryngologic associations; the American Otological Society, The American Laryngological Association, the American Laryngological, Rhinological and Otological Society, the American Academy of Ophthalmology and Otolaryngology and the Section of Laryngology, Otology and Rhinology of the American Medical Association. The object of the association is to elevate the standard of otolaryngology, to familiarize the public with its aims and ideals, to protect the public against unqualified practitioners, to receive applications for examination in otolaryngology, to conduct examinations of such applicants, to issue certificates of qualification in otolaryngology and to perform such duties as will advance the cause of otolaryngology. The first examination will be held at the time of the meeting of the American Medical Association.

With over 125 representative branches in principal cities the American Optical Company stands out pre-eminently as the foremost and outstanding wholesale optical organization in the United States as well as in Nebraska.

WELLSWORTH
PRODUCTS
for Better Eyesight

**Superior
Optical Prescription
Service**

Artificial Eyes Microscopes
Lenses Frames Mountings
Surgical Instruments
Air Pumps and Compressors Sterilizers
Blood Pressure Instruments
Trial Cases Retinoscopes Ophthalmoscopes
Ophthalmometers Phoroptors
Chairs Stools Cabinets Charts

Catalogue and prescription supplies on request

American Optical Company
EXCLUSIVELY WHOLESALE
Aquila Court Bldg. Omaha

All prescription orders executed the same day as received.

The Management of an Infant's Diet

Constipation

One of the many advantages that may properly be claimed for Mellin's Food as a milk modifier is particularly emphasized by bowel movements normal in consistency and regularity.

Babies whose diet is prepared with a sufficient amount of Mellin's Food to thoroughly modify the quantity of milk necessary for the daily nutritive requirement receive food capable of normal digestion and assimilation and are therefore not troubled with constipation or disturbances caused by faulty elimination of waste matter.

Literature based upon evidence of many years' accumulation is ready for physicians who are interested. In making requisition, please ask for "Constipation" pamphlet.

Mellin's Food Co., 177 State Street Boston, Mass.

Most Complete Lines
IN CENTRAL WEST
PHYSIOTHERAPY EQUIPMENT
Sales and Service For
Burdick Cabinet Co.
Milton, Wis.
McIntosh Electrical Co.
Chicago
Standard X-Ray Co.
Chicago
Send For Information
SEILER SURGICAL COMPANY
New Show Rooms
1818 Farnam St. Omaha, Neb.

PATTING YOURSELF ON THE BACK

Did you ever meet that fellow
  Who does everything just right?
If you advance an opinion opposing his own
  He is always ready to fight?

Did you ever notice his gestures
  And his smile that seems to say:
"You're not endowed with best of brains;
  You will never do it that way?"

Sometimes his predictions prove truthful,
  Ah, then see the lift of his head
As he turns on his heel and utters:
  "Well, that is just what I said."

How often you hope not to meet him,
  To avoid him you earnestly try
But he's there on the corner to greet you
  And boasts with his egotist's "I".

You try to listen in patience
  But you are wishing the while, alack,
That some day he'll put his arm out of joint
  While patting himself on the back.

—Anna M. F. Starring, M. D.,
Indianapolis Medical Journal.

AMPOULES

[PARKE, DAVIS & COMPANY]

COMMEND THEMSELVES TO THE CAREFUL PHYSICIAN

Because (1) In them the element of chance is superseded by the certainty of science.

(2) They are ready to use and easy to carry. No time is lost in making up solutions as required.

(3) They are made with full consideration of the characteristics of every ingredient. The glass employed is one which will not react with the solutions contained in them.

◆

AMPOULES PRESENT AVERAGE SINGLE DOSES OF IMPORTANT DRUGS

readily transferable to the hypodermic syringe, and less likely than improvised solutions to irritate the subcutaneous tissues.

The principle of standardization, which has given character to our products as a whole, is rigorously applied to the ampoule list, comprising a wide variety of formulae.

Of the line offered by Parke, Davis & Co., some are especially intended for intravenous use although, with very few exceptions, any solution in the list can be thus administered, the only desideratum being that which the physician alone can supply, namely, intravenous technique.

Our 48-page, therapeutically indexed booklet on Ampoules is sent to interested physicians on request.

PARKE, DAVIS & COMPANY
DETROIT ~ MICHIGAN

Bottles — *White Enamel Furniture* — Bandages

We supply on Short Notice—

Upjohn's Pharmaceuticals
Lloyd's Specifics
Diphtheria Antitoxin
Biologicals
Harrower Products
Genuine Luer Syringes
Sorensen Suction Apparatus
Bausch & Lomb Microscopes
and accessories
Etc. Etc. Etc.

Rubber Goods — *Surgical Instruments*

KOSTKA DRUG CO.
PHYSICIANS' SUPPLIES
143 SO. 11. LINCOLN, NEB.

Cotton — *Pills*

The
Huse Publishing
Company

Printers
Book Binders
Office Furniture
Office Supplies
Stationers

Norfolk - Nebraska

YOUR SOCIETY

By Victor Ridenour, Philadelphia

If your society is on the bum,
  Damn the Secretary;
If your members will not come,
  Damn the Secretary;
Don't take hold and do your part,
Don't help give the thing a start;
Show 'em that you are smart—
  Damn the Secretary.

If the programs are a frost,
  Damn the Secretary;
Don't help put the thing across,
  Damn the Secretary;
If the grub's not what you like,
Threaten to go on a strike;
Don't help, for the love of Mike—
  Damn the Secretary.

When you get your bills for dues,
  Damn the Secretary;
When you're asked to help, refuse,
  Damn the Secretary;
Let him do it—he gets paid—
Why should he be seeking aid?
That is why his job is made—
  Damn the Secretary.

—The Medical World.

SWEDISH MISSION HOSPITAL

Telephone Webster 0157

24th and Pratt Streets **Omaha, Nebraska**

Staff
H. P. Hamilton, M. D., F. A. C. S., Pres.
R. W. Bliss, M. D., F. A. C. P., Vice Pres.
Paul H. Ellis, M. D., Secretary

Surgical Staff
H. P. Hamilton, M. D., F. A. C. S.
E. W. Powell, M. D.
R. Rix, M. D.
Alf. J. Brown, M. D., F. A. C. S.
C. H. Waters, M. D., F. A. C. S.
Max Emmert, M. D., F. A. C. S.

Oculists and Aurists
Chas. S. James, M. D., F. A. C. S.
W. P. Wherry, M. D., F. A. C. S.
W. P. Haney, M. D., F. A. C. S.
J. Calvin Davis, M. D.

Oral Surgeon
Wm. L. Shearer, M. D., F. A. C. S.

Internes
J. H. McMillin
C. H. Folsom

Gynecologist
Palmer Findley, M. D., F. A. C. S.

Medical Staff
R. W. Bliss, M. D., F. A. C. P.
Paul H. Ellis, M. D.
Warren Thompson, M. D.
George P. Pratt, M. D., F. A. C. P.

General Staff
E. J. Griffin, M. D.
George W. Prichard, M. D.
Glenn D. Whitcomb, M. D.

Pediatrician
Clyde Moore, M. D.

Obstetrician
J. F. Hyde, M. D.

Roentgenologist
Chas. H. Ballard, M. D.

Pathologist
E. T. Manning, M. D.

For particulars, write to the Hospital.

Radium for Rent

Radium loaned at very reasonable rates, and detailed information furnished as how to apply it, to physicians desiring to treat their own patients with Radium. Send for descriptive literature describing our *Radium Rental Service* and the pamphlet "Indications for Radium Therapy".

Quincy X-Ray and Radium Laboratories
"Devoted Exclusively to Radiology in all its Branches"
731 Hampshire Street **Quincy, Ill.**

WHY DO DOCTORS MAKE GOOD RADIOPHANS?

They have lots of "patients,"
And are strong on "operating";
Are experts at "cutting out,"
Know something about "pulling wires"
And can use the stethoscope to get the "beats."
They are "positive" your blood test at times shows "negative";
Also test your "amperage" with (thermometer),
And when they put in the "charge" they usually get poor "reception."

—D. M. Lockwood.

We supply your needs for the coming year

MAUL BROS.
LINCOLN PRINTING COMPANY

Thank

Two words easy to say. Yes, we know them well and when used are said with an expression of gratitude or obligation.

You--

236 No. 13th Street, Lincoln, Nebr.

Week Commencing June 1st, 1925

APPROVED LECTURES

and

PRACTICAL CLINIC

by

DR. C. M. SAMPSON

formerly of the

Physiotherapy Service, Walter Reed, Fox Hills, Hoff General and U. S. Veterans Hospitals.

Full Course.....................$50.00

Detailed information on request

Secretary Sampson's Lecture Course,
320 So. 19th St.,
Omaha, Nebraska.

Gentlemen:—Please register me for Dr. Sampson's Course in Physiotherapy to be held in Omaha, Nebr., commencing June 1, 1925, and lasting for six days. I am enclosing $10.00 as registration fee and will pay the balance, $40.00, at first lecture.

Signed....................................

....

We Are Sales and Service Agents For The

"HANOVIA" ALPINE SUN

and

KROMAYER LAMPS

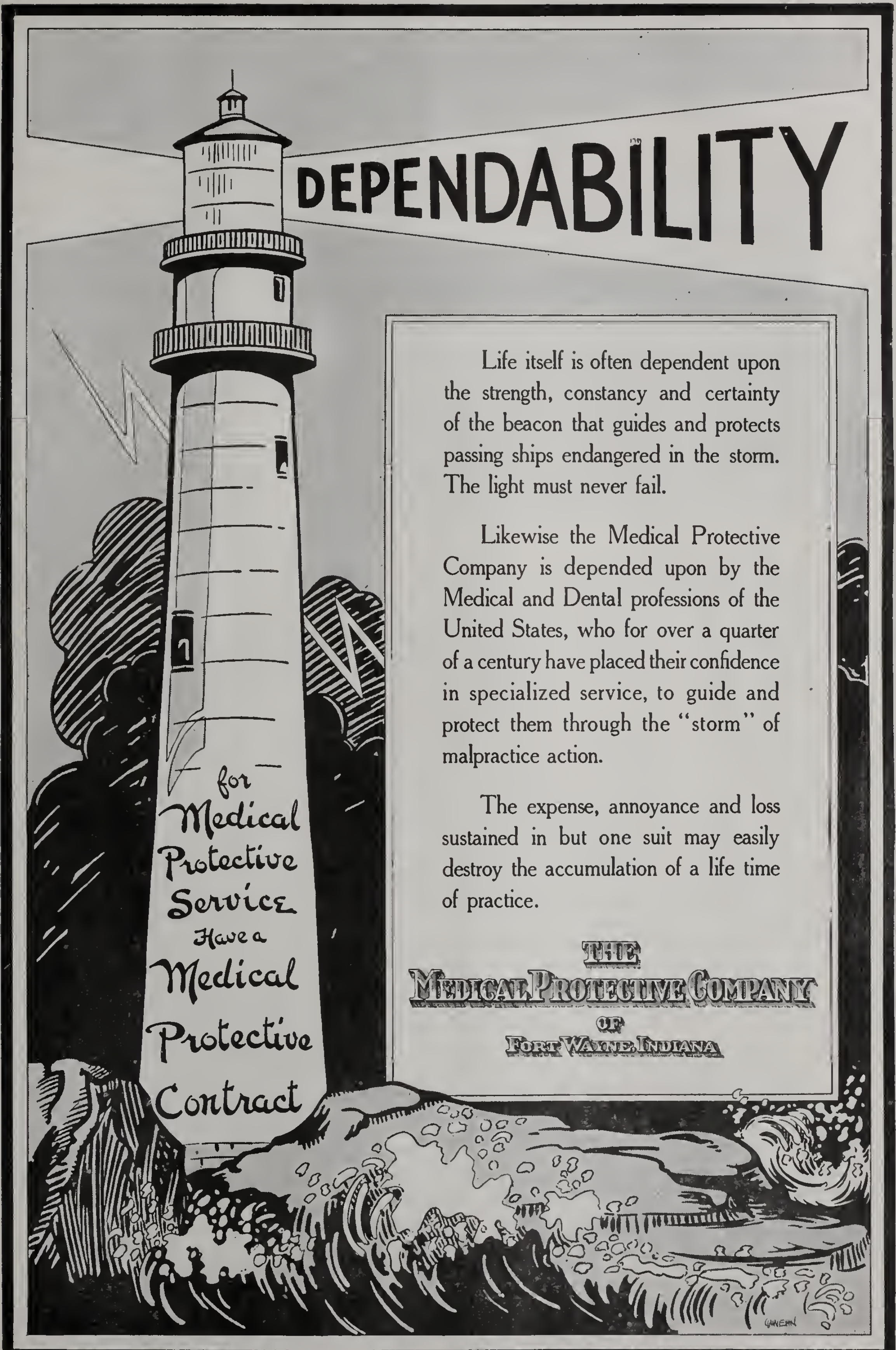
also the

'STANDARD JUNIOR' High Frequency Equipment

Let us submit our plan for financing the purchase of this wonderful equipment. A small cash payment will place in your hands one of the greatest curative agencies of the time. The equipment will do the rest.

THE WESTERN X-RAY COMPANY

320 So. 19th St., Omaha, Nebr.


DEPENDABILITY
for Medical Protective Service Have a Medical Protective Contract

Life itself is often dependent upon the strength, constancy and certainty of the beacon that guides and protects passing ships endangered in the storm. The light must never fail.

Likewise the Medical Protective Company is depended upon by the Medical and Dental professions of the United States, who for over a quarter of a century have placed their confidence in specialized service, to guide and protect them through the "storm" of malpractice action.

The expense, annoyance and loss sustained in but one suit may easily destroy the accumulation of a life time of practice.

THE
MEDICAL PROTECTIVE COMPANY
OF
FORT WAYNE, INDIANA

The Radium Hospital of Omaha

For the treatment of Cancer, Tumor and precancerous conditions. Fifty rooms devoted entirely to Radium Treatment.

Complete X-ray Equipment

D. T. QUIGLEY, M. D.
Director

34th and Farnam Streets. Omaha, Neb.

ANNOUNCEMENTS

A Practical Course in Standardized Physiotherapy, under auspices of Biophysical Research Dept. of Victor X-Ray Corporation, is now available to physicians. Offers a highly practical knowledge of all the fundamental principles that go to make up the standards of modern scientific physiotherapeutic work. Course requires one week's time. For further information apply to J. F. Wainwright, Registrar, 236 So. Robey St., Chicago, Ill.

SITUATIONS WANTED

WANTED: Salaried Appointments for Class A Physicians in all branches of the Medical Profession. Let us put you in touch with the best man for your opening. Our nation-wide connections enable us to give superior service. Aznoe's National Physicians' Exchange, 30 North Michigan, Chicago. Established 1896. Member The Chicago Association of Commerce.

RURAL AND URBAN HEALTH

A comparison was made by W. P. Shepard and H. S. Diehl, Minneapolis (Journal A. M. A., Oct. 11, 1924), of physical defects in university students from rural and urban districts. The physical examination records of 3,478 male students of the University of Minnesota were selected for study. It appears that students raised in villages of from fifty to 1,000 population have more physical defects than students raised in other communities. Multiple defects are also common in this group. Students raised on farms show more physical defects than those raised in towns or large cities, about the same number as those from small cities and less than those raised in villages. Students raised in towns of from 1,000 to 5,000 population show less physical defects than any others except those from large cities. Students raised in large cities of from 5,000 to 50,000 population are exceeded in total physical defects only by students from villages. Students raised in cities of more than 50,000 population show the lowest number of physical defects.

Lederle
POLLEN ANTIGEN
—in stock—
Immediate Shipment

FREE
Diagnostic tests of causative pollens of your locality.

DROP US A POSTAL CARD.

New
Complete Rabies
Treatment—14 Dose
in Stock—$20.25

DONLEY STAHL Co.
DEPENDABLE SERVICE
THE PHYSICIAN'S SUPPLY HOUSE
Lincoln Nebr.

Trademark Registered STORM Trademark Registered
Binder and Abdominal Supporter
(PATENTED)

Trade Mark Reg. Trade Mark Reg.

For Men, Women and Children
For Ptosis, Hernia, Pregnancy, Obesity, Relaxed Sacro-Iliac Articulations, Floating Kidney, High and Low Operations, etc.

Ask for 36-page Illustrated Folder.
Mail orders filled at Philadelphia only—within 24 hours.

Katherine L. Storm, M. D.
Originator, Patentee, Owner and Maker
1701 Diamond Street Philadelphia

ECZEMA — BROMINE INJECTIONS

Prof. Lebejdew (Taschkent, Turkestan) reports on astonishing effects obtained in acute ecezematous affections with intravenous injections of R.: Sod. bromat. 1.0, solutions sod. chlorati (0.85%) 10.0 gm., which were given daily or every other day. Acute erythematous eczema of the face with odema and weeping disappears suddenly without any local therapy in a day or two. In the same way the bromine injections are of specific effect in acute ecezma on other parts the de body. The result of this treatment is obvious also in subacute and chronic ecezma, but takes more time and should be supported by local measures. With angioneurosis, toxic erythema, urticaria and pityriasis rosea 4—5 injections are usually necessary. In a hysterical woman with lichen planus the exanthema disappeared after 11 injections. Acute cases of psoriasis also are rapidly brought to a standstill, whereupon the local treatment is far more efficacious. (Derm. Wschr. No. 35, 1924.)

Waukesha Springs Sanitarium
FOR THE CARE AND TREATMENT OF
NERVOUS DISEASES
BYRON M. CAPLES, M. D., MEDICAL DIRECTOR
FLOYD W. APLIN, M. D. L. H. PRINCE, M. D.
Building Absolutely Fireproof WAUKESHA, WIS.

THE EXCELSIOR SPRINGS SANITARIUM
EXCELSIOR SPRINGS, MO.
For the treatment of Brights Disease, Diabetes, Rheumatism and Gastro Intestinal diseases, etc. Diet—Mineral waters—Mineral water Baths—Physiotherapy.
R. W. Prather, M. D., Supt.,
Medical Directors — C. H. Suddarth, M. D.; J. E. Baird, M. D.; J. E. Musgrove, M. D.

Nurses' Club of Omaha
and Registry
Graduated Registered Nurses
OPEN DAY AND NIGHT
NELLE A. PERRY, Registrar
Phone Web. 5206 1124 No. 18th St.

Omaha Brace Shop
At the service of the profession.
under supervision of
Doctors Lord, Schrock & Johnson
501 Aquila Court
Phone: ATlantic 5449
Braces, Splints, Foot Plates, Corsets, etc.

WHEN IN OMAHA
STOP WITH US
Hotel Conant
Hotel Sanford
Hotel Henshaw
Our reputation of 20 years fair dealing is back of these hotels. Guests may stop at any one of them with the assurance of receiving honest value and courteous treatment.
CONANT HOTEL COMPANY

Omaha
Maternity
Hospital
No. 2204 St. Mary's Avenue
OMAHA - NEBRASKA
Telephone AT6345 *REGISTERED NURSES*

10th Year of Experience Rates Reasonable
Strictly Modern Service.
Private HOSPITAL and Maternity Home
2954 Apple Street
LINCOLN, NEBRASKA
Phone B4104 MRS. H. T. ROEDER, Superintendent

INTARVIN

An artificial fat made from fatty acids having an odd number of carbon atoms. Intarvin is composed of the glyceryl esters of margaric acid admixed with small quantities of the glyceryl esters of pentadecylic, palmitic and stearic acids, 82 per cent; liquid petrolatum, 12 per cent; water, 6 per cent. Intarvin is proposed for use in diabetes mellitus on the ground that fatty acids containing an odd number of carbon atoms do not yield ketone bodies on oxidation in the normal or diabetic organism, and that for this reason it may with advantage replace the natural fats in the diet. The evidence indicates that intarvin does not increase the production and may reduce the production of ketones in certain cases; and that it has a protein sparing-action; that sugar is formed from it in small amounts only; that it has little if any beneficial effect on carbohydrate metabolism in the human organism; that its unpalatable taste is a drawback to its use, and that it may prove useful in the treatment of diabetes in certain cases.

TONSILLECTOMIZED THROATS

"The appearance of tonsillectomized throats has for some time attracted the attention of thoughtful laryngologists. Masses of cicatricial tissue, adhesions, loss of muscular tissue, pain in the throat persisting for months after the operation, etc., have been noticed altogether too frequently."

Increasing the Nutritional yield of Milk—23%

The protective colloidal ability of pure, plain gelatine, in preventing the curdling of milk by the enzyme rennin and hydrochloric acid of the gastric juice, is one of the most important discoveries relating to milk nutrition.

Thomas B. Downey, Ph. D., of Mellon Institute, University of Pittsburgh, has determined by standard feeding tests that 1% of pure, plain gelatine, dissolved and added to milk, increases the nutritional yield by about 23%.

Here is the most approved method of modifying baby's milk with Gelatine:

> Soak for ten minutes one level tablespoonful of Knox Sparkling Gelatine in ½ cup of cold milk taken from the baby's formula; cover while soaking; then place the cup in boiling water, stirring until gelatine is fully dissolved; add this dissolved gelatine to the regular formula.

For children and adults follow the same method, but in the proportion of ½ teaspoonful of gelatine to a glass of milk.

In infant feeding the gelatine may be added to any regular formula prescribed by the physician.

To safeguard against impurity and disturbing acidity it is essential to specify Knox Sparkling Gelatine, the Highest Quality for Health.

The physician's reference book of nutritional diets with recipes, will be sent free to any physician, upon request, if he will address the Knox Gelatine Laboratories, 429 Knox Avenue, Johnstown, N. Y.

NOTE: From the raw material to the finished package, the family of Knox takes pride in producing the highest quality of Gelatine.

Bottles

White Enamel Furniture

Bandages

We supply on Short Notice—

Upjohn's Pharmaceuticals
Lloyd's Specifics
Diphtheria Antitoxin
Biologicals
Harrower Products
Genuine Luer Syringes
Sorensen Suction Apparatus
Bausch & Lomb Microscopes
and accessories
Etc. Etc. Etc.

Rubber Goods

Surgical Instruments

KOSTKA DRUG CO.
PHYSICIANS' SUPPLIES
143 SO. 11. LINCOLN, NEB.

Cotton

Pills

The
Huse Publishing
Company

Printers
Book Binders
Office Furniture
Office Supplies
Stationers

Norfolk - Nebraska

THE CLIQUE

What is the clique? 'Tis those who attend
All the meetings, on whom we depend.
They never are absent unless they are sick.
These are the ones the grouch call "The Clique".
The ones who are never behind with their dues,
Who come to the meetings and have their own views—
They'll serve on committees, and never say "die".
"The Clique" are the ones that always "get by".
We all should be proud of members like these.
You can call them "The Clique" or whatever you please.
They never attempt any duties to shirk.
These are "The Clique" that do most of the work.
But there are some people who always find fault,
And most of this kind are not worth their salt.
They like to start trouble, seldom will stick;
They like to put all the work on "The Clique".

—Selected.

Bottles — *White Enamel Furniture* — Bandages

We supply on Short Notice—

Upjohn's Pharmaceuticals
Lloyd's Specifics
Diphtheria Antitoxin
Biologicals
Harrower Products
Genuine Luer Syringes
Sorensen Suction Apparatus
Bausch & Lomb Microscopes
and accessories
Etc. Etc. Etc.

Rubber Goods — *Surgical Instruments*

KOSTKA DRUG CO.
PHYSICIANS' SUPPLIES
143 SO. 11. LINCOLN, NEB.

Cotton — *Pills*

SAVE MONEY ON YOUR X-RAY SUPPLIES

Get Our Price List and Discounts Before You Purchase

WE MAY SAVE YOU FROM 10% TO 25% ON X-RAY LABORATORY COST

Among the Many Articles Sold Are

X-RAY FILM, Duplitized or Dental, Eastman, Super-speed or Agfa Film. Heavy discounts on standard package lots. X-Ograph, Eastman, Justrite and Rubber Rim Dental Film, fast or slow emulsion.

BRADY'S POTTER BUCKY DIAPHRAGM insures finest radiographs on heavy parts, such as kidney, spine, gallbladder or heads.
Curved Top Style—up to 17x17 size cassettes $250.00
Flat Top Style—holds up to 11x14 cassettes $175.00

DEVELOPING TANKS, 4, 5 or 6 compartment stone, will end your dark room troubles. Ship from Chicago, Brooklyn, Boston or Virginia. Many sizes of enameled steel tanks.

INTENSIFYING SCREENS—Patterson, T. E., or Buck X-Ograph Screens for fast exposure alone or mounted in Cassettes. Liberal discounts. All-metal cassettes. Several makes.

If you have a machine have us put your name on our mailing list.

GEO. W. BRADY & CO.
784 So. Western Ave., Chicago

Kansas City Annual Fall Clinical Conference
October 5-6-7-8-9, 1925.
K. C. Athletic Club Building Kansas City, Mo.

Mark up your schedule today for a five days' leave of absence—October 5-9—for attendance at the Annual Fall Clinical Conference.

These distinguished guests will demonstrate, in lecture and clinic, for the benefit of the practitioners and specialists in the Great Southwest, the progress made in medicine and surgery during the past year:

Dr. Isaac Abt, Pediatrics, Chicago, Ill.
Dr. B. S. Barringer, Urology, New York City
Dr. Roy B. Canfield, Ear, Nose and Throat, Ann Arbor, Mich.
Dr. R. C. Coffey, Surgery, Portland, Ore.
Dr. Russell A. Hibbs, Orthopedics, New York City
Dr. Chas. F. Hoover, Medicine, Cleveland, Ohio
Dr. Alexander Lambert, Medicine, New York City
Dr. W. J. Mayo, Surgery, Rochester, Minn.
Dr. John Elmer Weeks, Eyes, New York City
Dr. T. W. Salmon, Neurology, New York City

Associated with the Annual Meeting of the Medical Association of the Southwest.

Operative and diagnostic clinics at all Allied Hospitals in Greater Kansas City. DAILY CLINICAL BULLETIN, listing medical and surgical work in hospitals and offices of doctors in Greater Kansas City, makes available to visiting physicians the most comprehensive clinical opportunities of Kansas City.

An elaborate scientific and commercial exhibit, occupying more than 3500 square feet of space in ENCLOSED ROOF GARDEN of the ATHLETIC CLUB BUILDING.

For further information and reservations, address

KANSAS CITY CLINICAL SOCIETY
Kansas City, Missouri.
631 Rialto Building Telephone: Delaware 2398.

The Lord Lister Hospital

A General Open Hospital, Completely Equipped in All Departments.

Lord Lister Hospital Staff

President:
E. C. Henry, M. D.

Secretary:
Howard L. Updegraff, M. D.

Treasurer:
S. Edw. Isacson, Ph. D.

Surgery:
E. C. Henry, M. D.
L. A. Dermody, M. D.
Howard L. Updegraff, M. D.

Nervous and Mental Diseases:
Ernest Kelley, M. D.

Dermatology & Urology:
Edgar G. Barnhart, M. D.

Physiotherapy:
H. A. Waggener, M. D.

Orthopedics:
L. A. Dermody, M. D.

Obstetrics and Gynecology:
Roy A. Dodge, M. D.
Frederick J. Wearne, M. D.
A. S. Pinto, M. D.

Industrial Surgery,
Willis J. Redfield, M. D.

Eye, Ear, Nose and Throat:
L. C. Bleick, M. D.
J. Calvin Davis, Jr., M. D.

Pediatrics:
Floyd Clarke, M. D.

Roentgenology:
R. W. Fouts, M. D.

Pathology:
S. Edw. Isacson, Ph. D.

For Particulars Address Superintendent, Lord Lister Hospital, 26th & Dewey Ave., Omaha, Neb.

Worth Writing for and Trying

FOR INFANTILE DIARRHEA

50 BULGARA TABLETS

and Literature

Hynson, Westcott & Dunning
Baltimore, Maryland

THE APPENDIX IN RELATION TO OR AS THE CAUSE OF OTHER ABDOMINAL DISEASES

Charles H. Mayo, Rochester, Minn. (Journal A. M. A., Aug. 23, 1924), is convinced that the appendix undoubtedly is the source of chronic infection in the upper abdomen, and, as a rule, should be examined and removed during operation on the gallbladder or on ulcers of the stomach or duodenum. If, in examination of the abdomen before operation for pathologic conditions other than appendix is found to be much more seriously diseased than the symptoms had indicated, or in operations on the chronic diseased appendix the condition is found to be much more extensive and serious than was expected from the symptoms, the appendix should be considered a possible focus of disease involving the upper abdomen, and the exploration should be extended to this region by increasing the length of the incision, which is possible if it is a right median rectus incision. So far as the patient is concerned, if he is chronically sick from gastric trouble with ploric spasm, even if it is the result of reflex action from disease of the gallbladder or appendix, he is entitled to relief and the greatest degree of permanent relief is usually best attained by surgery. If operation fails to confirm supposed disease of the gallbladder or ulcers of the stomach or duodenum, the appendix should be examined, as it may be the offender.

INDEX TO ADVERTISERS

	Page
Maltbie Chemical Co.	1
Peters Trust	1
E. R. Squibb & Sons	2
Kostka Drug Co.	3
Geo. W. Brady & Co.	3
Kansas City Clinical Society	3
Lord Lister Hospital	4
Hynson, Westcott & Dunning	4
Green Gables	5
W. G. Cleveland Co.	6
Nurses Club of Omaha	6
Omaha Brace Shop	6
Simpson Major Sanitarium	6
Index to Advertisers	7
St. Elizabeth Hospital	8
Bolen Mfg. Co.	8
Uni. of Nebr.	9
Post Graduate Hospital & Medical School	10
Kessler School of Lip Reading	10
Immanuel Hospital	10
Waukesha Springs Sanitarium	10
Excelsior Springs Sanitarium	10
Creighton University	11
Mellin's Food Co.	12
G. Wilse Robinson Sanitarium	12
Radium Rental Service	13
Nurses Club and Registry	13
Baker Bros. Engraving Co.	13
American Optical Co.	14
Fairchild Bros. & Foster	15
Willows Sanitarium	15
Clarkson Memorial Hospital	16
Michael G. Wohl's Laboratory	16
Parke, Davis & Co.	17
Horlick's Malted Milk	18
Classified Advertisements	18
Medical Protective Co.	19
Radium Hospital of Omaha	20
Donley Stahl Co.	21
Katherine L. Storm	21
Methodist Hospital	21
Omaha Maternity Hospital	22
Mrs. H. T. Roeder	22
Battle Creek Sanitarium	22
Hotel Conant	22
Knox Gelatine Co.	23
Nebraska Laboratory	24
Huse Publishing Co.	24
Swedish Mission Hospital	25
W. J. Whitaker	25
Lincoln Printing Co.	25
Western X-Ray Co.	26
Mead Johnson Co.	27
Riggs Optical Co.	28

St. Elizabeth's Hospital and School of Nursing

SISTERS OF ST. FRANCIS

Eleventh & South Sts. **Lincoln, Nebraska**

Sister M. Hedwig, Superioress
Sister M. Edwarda, Supt. Training School
Edmund G. Zimmerer, M. D., Medical Director.

Department of Surgery
Attending Surgeons
A. I. McKinnon, M. D., F. A. C. S.
F. B. Hollenbeck, M. D., F. A. C. S.
E. B. Finney, M. D., F. A. C. S.
J. S. Welch, M. D., F. A. C. S.
D. C. Hilton, M. D., F. A. C. S.
K. S. J. Hohlen, M. D., F. A. C. S.

Orthopedic Surgeon
H. W. Orr, M. D., F. A. C. S.

Gynecologists
F. A. Graham, M. D.
A. W. Graham, M. D.

Eye, Ear, Nose and Throat Attending
Fred. F. Teal, M. D.
S. G. Zemer, M. D.

Associate in Eye, Ear, Nose and Throat
J. M. Woodward, M. D.

E. B. Brooks, M. D.

Obstetricians
W. C. Becker, M. D.
S. O. Reese, M. D.

Urologist
Everett E. Angle, M. D.

Oral Surgeon
T. A. Trumble, D. D. S.

Associate in General Surgery
C. C. Johnson, M. D., F. A. C. S.
Chas. Arnold, M. D.
C. C. Hickman, M. D.
T. F. McCarthy, M. D.

Radiologist
Carl Kail, M. D.

Department of Medicine
Attending Physicians
H. J. Lehnhoff, M. D.
E. G. Zimmerer, M. D.
Harry Taylor, M. D.

George W. Covey, M. D.
W. F. Slattery, M. D.

Pediatrician
W. C. Colburn, M. D.

Neurologist
B. F. Williams, M. D.

Dermatologist
E. J. Angle, M. D.

Associate in Medicine
E. R. Ryerson, M. D.
B. A. Finkle, M. D.
E. E. Rider, M. D.

Associate in Pediatrics
E. V. Wiedman, M. D.

Consultants
A. R. Mitchell, M. D., F. A. C. S.
W. L. Dayton, M. D.
E. W. Rowe, M. D.

Resident Physician
Harold Van Hoose, M. D.

BOLEN
Abdominal Supporters and Binders
Elastic Hosiery, Laced Linen Mesh Stockings, etc.
PATENTED

Maternity Binder

Supporters for every purpose, Enteroptosis, Nephroptosis, Obesity, Post-Operative, Hernia, Pregnancy, Sacro-Iliac, etc.

Special Attention Given to High Operations

Everything made to your order and orders filled within 48 hours after they reach our office. WRITE FOR DESCRIPTIVE LITERATURE

BOLEN MANUFACTURING COMPANY
1712 Dodge Street Omaha, Nebraska

EPINEPHRIN IN THE TREATMENT OF THE PAIN OF HERPES ZOSTER

W. W. Duke, Kansas City, Mo. (Journal A. M. A., Dec. 13, 1924), has had four years' experience with epinephrin in the treatment of herpes zoster. He has been disappointed in its effect on the vesicular lesions, but in more than half the cases it relieved the pain almost immediately, if given in adequate dosage. In using epinephrin in this condition, it is necessary to adjust the dose to suit the individual case. The dose should be pushed until the patient experiences relief or an epinephrin tremor. The amount necessary to give relief or tremor varies in different individuals from 1 minim up to several cubic centimeters—in fact, it varies in the same individual at different times almost to this extent. As a general rule, it should be given subcutaneously in doses of about 0.5 c. c. at five-minute intervals, until the patient is either relieved or shows a distinct tremor. When the tremor appears, the pain in the majority of cases disappears. It usually returns in from two to twenty-four hours. The dose of epinephrin can then be repeated and continued indefinitely without injury to the patient. As a rule, it makes the use of morphin unnecessary, or at least reduces its necessity to an occasional dose.

GASTRON

An aqueous-acid-glycerin extract of the entire mucosa of the fresh stomach, including the pyloric, containing the peptic enzymes—proteolytic and milk-curdling, the activated principles and naturally associated soluble organic and inorganic constituents.

GASTRON is a stable, potent fluid, free from alcohol and free from sugar, with an acidity approximately of 0.25% absolute hydrochloric acid, loosely bound to protein, and twenty-five per cent pure glycerin.

GASTRON is put up in 6 oz. unlettered bottles, without literature.

Fairchild Bros. & Foster
New York

The WILLOWS
MATERNITY
SANITARIUM

A superior seclusion maternity home and hospital for unfortunate young women. Patients accepted any time during gestation. Adoption of babies when arranged for. Prices reasonable.

Write for 90-page illustrated booklet.

The Willows
2929 Main St.
Kansas City, Mo.

THE BISHOP
Clarkson Memorial Hospital
2100 Howard Street, OMAHA, NEBR.

Rt. Rev. Ernest V. Shayler, President.
F. H. Davis, Vice-President
William Ritchie, Jr., Secretary and Treasurer.

ATTENDING STAFF

President, J. P. Lord, M. D.
Secretary, C. O. Rich, M. D.

Surgery:
J. E. Summers, M. D.
C. O. Rich, M. D.
B. B. Davis, M. D.
C. A. Hull, M. D.
C. A. Roeder, M. D.
A. C. Stokes, M. D.
A. J. Brown, M. D.
C. H. Waters, M. D.

Urologist:
Edwin Davis, M. D.

Internal Medicine:
A. W. Edmiston, M. D.
A. D. Dunn, M. D.
W. N. Anderson, M. D.
W. Y. Thompson, M. D.
G. P. Pratt, M. D.

Orthopedic Department:
J. P. Lord, M. D.
R. D. Schrock, M. D.

Eye, Ear, Nose, Throat:
J. M. Patton, M. D.
J. B. Potts, M. D.
S. R. Gifford, M. D.
W. A. Cassidy, M. D.

Pediatrics:
J. A. Henske, M. D.

Obstetrics:
E. C. Sage, M. D.
C. F. Moon, M. D.

Consulting Staff
W. O. Bridges, M. D.
H. Gifford, M. D.

Miss Homer C. Harris, R. N., Superintendent

Dr. Michael G. Wohl's
Laboratory of Clinical
Pathology

517-18 CITY NAT'L BK. BLDG.,
Omaha, Nebr.

MERCY HOSPITAL
Council Bluffs, Ia.

Chemical, Microscopical, Bacteriological
and Metabolic Determinations.

EFFECTS OF IRRIGATION WITH SURGICAL SOLUTION OF CHLORINATED SODA

With the publication of Volume XI of the Medical Department of the United States Army in the World War, statistical results concerning the treatment of empyema with antiseptic solutions have been made available. These are analyzed by Franklin A. Stevens, New York (Journal A. M. A., Nov. 8, 1924), and show that: Irrigation of empyema cavities with surgical solution of chlorinated soda sterilizes the cavity and promotes healing of the wound. Early irrigation, immediately following the operation, is more effective in sterilizing these cavities than irrigation when the cavity has become chronic. Healing is promoted in both acute and chronic cavities. Solutions to be effective and not injurious must contain between 0.4 and 0.5 per cent of available chlorin. They should be neutral to phenolphthalein. Contraindications to irrigation are pleuropulmonary fistulas and hemorrhage from the pleura. Continued irrigation of chronic cavities resulted in a marked decrease in the size of the cavities. The percentage of recurrences and the percentage of thoracoplastic operations necessary are decreased by irrigation with surgical solution of chlorinated soda.

THE PREVENTION OF

HYDROPHOBIA

(RABIES)

OF LATE a great many cases of rabies in dogs have been reported from various parts of the United States. These reports show that the infection is widely distributed. No section of the country is entirely free from rabies. The dog, from the very nature of his habits, is the main disseminator of this disease.

The physician is called on today as never before to guard his patients against rabies. Only one form of treatment is available —*preventive vaccination* before the appearance of symptoms.

Whitmore (Tice, Practice of Medicine) lists the conditions calling for antirabic vaccination after a dog bite, as follows:

1. If rabies is in the district, antirabic vaccination should be started at once and continued until the dog can be observed for ten days.
2. If the dog dies or is killed or disappears in less than ten days after biting the patient.
3. If the dog is unknown.
4. If the dog is living and after observation for ten days develops rabies, dies under suspicious circumstances, or is sick.

Rabies Vaccine (Cumming), prepared in the Biological Laboratories of Parke, Davis & Co., is a sterile suspension of brain tissue from rabbits killed with fixed virus (death with paralysis in seven days). The infectivity is removed by dialysis, while the full immunizing properties are retained. No report of injurious results to the patient following treatment has ever been received.

Few specific prophylactic agents present a record for dependability comparable to that attained by Rabies Vaccine (Cumming). During the many years that Rabies Vaccine (Cumming) has been supplied to the medical profession, not one complaint of distinct failure relating to this product has ever reached the Laboratories. Considering the many thousands of patients treated with Rabies Vaccine (Cumming), this is a truly remarkable record.

The Vaccine is obtainable on short notice by all druggists, being carried in stock under proper conditions for its preservation, by the home laboratory and our branches.

PARKE, DAVIS & COMPANY

(United States License No. 1 for the Manufacture of Biological Products)

DETROIT — MICHIGAN

RABIES VACCINE (CUMMING), P. D. & CO., IS INCLUDED IN N. N. R. BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION

EXTENSIVELY PRESCRIBED

Horlick's Malted Milk

The Original

It is uniform,
Safe and Reliable

EVERY ingredient of the best quality, and our superior facilities and experience as the originators insures satisfaction.

ADVOCATED extensively by the medical profession, over one-third of a century, in the prescribed feeding of infants, invalids and convalescents generally.

Avoid imitations *Samples prepaid*

Horlick's Malted Milk Co.
Racine, Wis.

Classified Advertisements

A Practical Course in Standardized Physiotherapy, under auspices of Biophysical Research Dept. of Victor X-Ray Corporation, is now available to physicians. Offers a highly practical knowledge of all the fundamental principles that go to make up the standards of modern scientific physiotherapeutic work. Course requires one week's time. For further information apply to J. F. Wainwright, Registrar, 236 So. Robey St., Chicago, Ill.

SITUATIONS WANTED

WANTED: Salaried Appointments for Class A Physicians in all branches of the Medical Profession. Let us put you in touch with the best man for your opening. Our nation-wide connections enable us to give superior service. Aznoe's National Physicians' Exchange, 30 North Michigan, Chicago. Established 1896. Member The Chicago Association of Commerce.

COLLECTION SERVICE
AMERICAN MEDICAL BOARD OF ADJUSTERS

First National Bank Building, CHICAGO. Guaranteed Delinquent Collection Service. Anywhere U. S. A. (Medical Profession Exclusively). Debtors pay you direct. Litigation avoided. Adjustments encouraged. No "Agency" methods. Financially responsible. WRITE!

IMPROVED METHOD FOR RABIES PREVENTION

Time was, and not so very long ago, when a mad dog could terrorize a whole community; to be bitten by such an animal was not merely a death sentence, but a sentence to the most horrible of deaths. The resourcefulness and persistent energy of one man, a pioneer, has changed all this. Pasteur's method of preventing hydrophobia was indeed the dawning of a new day. Still, for many years it was necessary for the victims of mad dog bites to be taken to "institutes" for treatment, and not only failure but injury from the treatment was possible.

A pioneer is most honored by those who catch his spirit and continue to go forward. The Pasteur method has been improved. "Institutes" are no longer necessary. Toxicity has been found to be no essential factor in the immunizing treatment, and Rabies Vaccine is now available that is incapable of injuring the patient, no matter what dose in the "course" is given first or last—all being alike. And, strange to say, this Vaccine has been demonstrated to confer a higher degree of immunity than the desiccated spinal cord originally used.

Our readers are referred to the advertisement in this issue entitled "The Prevention of Hydrophobia," and for more complete particulars to Parke, Davis & Co., Detroit, Mich., who have recently issued a free booklet on "Rabies Vaccine".

Joshaway Crabapple says: "The most dangerous part of an automobile is the driver."

You Are entitled to a Vacation

The Medical Protective Company never takes one

Here is the reason.

May 5, 1925.

Dear Sirs:

I am enclosing herewith a copy of a letter which I received today.

As I am leaving on a trip to be gone a couple of months, I shall appreciate hearing from you by return mail. I leave here May 15th.

Thanking you kindly for your prompt attention to the enclosed matter, I am,

Very truly yours,

A part of the letter he received

Dear Doctor:

Mrs. ——— has retained me to present to you her claim for damages arising out of your alleged negligent handling of injury sustained February 16th, 1925.

Our answer

Dear Doctor:

You may rest assured your interests will suffer no jeopardy during your absence and there is no reason why you should postpone your trip.

For Medical Protective Service have a Medical Protective Contract

THE
MEDICAL PROTECTIVE COMPANY
OF
FORT WAYNE, INDIANA

The Radium Hospital of Omaha

For the treatment of Cancer, Tumor and precancerous conditions. Fifty rooms devoted entirely to Radium Treatment.

Complete X-ray Equipment

D. T. QUIGLEY, M. D.
Director

34th and Farnam Streets. **Omaha, Neb.**

ECZEMATOID RINGWORM

Out of a total of 1,800 consecutive new cases, seen by H. H. Hazen, Washington, D. C. (Journal A. M. A., Oct. 11, 1924), 161 were eczematoid ringworm. Apparently the disease is most frequently acquired by treading where the unshod have trod; many cases are acquired from the runways of swimming pools, and from the floors of athletic clubs. The bath mat is another frequent source of infection. In twenty-five instances, the nails were involved. It is not generally appreciated that serious disability is frequently produced by this disease. In this series of cases, there were seventeen patients who were totally disabled for periods varying from two weeks to one year. Fourteen patients were totally disabled for from one to two weeks. In addition, thirty-two showed a marked partial disability. The diagnosis must be made from four conditions: pompholyx, eczema, irritant dermatitis and erosio interdigitalis blastomycetica. In this series of cases, fourteen have proved nearly intractable to treatment. Ten presented grave therapeutic difficulties. It should never be forgotten that recurrence is only too prone to occur. Numerous antiseptics have been tried. Whitefield's ointment, which should be much stronger in salicylic acid than originally described; mercurochrome-220 soluble in ointment or solution; iodin; chrysarobin; and all other antiseptics have been recommended. In Hazen's hands, the first two have been of much value. Drying lotions and powders are frequently necessary in cases in which there is much irritation or oozing. The ultraviolet ray, light curettage, air, sunlight, light open shoes and avoidance of irritation all have their place. Weekly treatments with one-quarter unit doses of the roentgen ray are often extremely useful. It is usually believed necessary to peel the affected skin before cure takes place.

"Did the doctor remove your appendix?"

"Feels to me like he removed my whole table of contents."—Octupus.

Lederle

POLLEN ANTIGEN

—in stock—
Immediate Shipment

FREE

Diagnostic tests of causative pollens of your locality.

DROP US A POSTAL CARD.

New
Complete Rabies
Treatment—14 Dose
in Stock—$20.25

DONLEY STAHL Co.
DEPENDABLE SERVICE

THE PHYSICIAN'S SUPPLY HOUSE
Lincoln Nebr.

Trademark Registered **STORM** Trademark Registered

Binder and Abdominal Supporter
(PATENTED)

Trade Mark Reg.

Trade Mark Reg.

For Men, Women and Children

For Ptosis, Hernia, Pregnancy, Obesity, Relaxed Sacro-Iliac Articulations, Floating Kidney, High and Low Operations, etc.

Ask for 36-page Illustrated Folder.
Mail orders filled at Philadelphia only—within 24 hours.

Katherine L. Storm, M. D.
Originator, Patentee, Owner and Maker
1701 Diamond Street Philadelphia

I. Surgery and Gynecology
Chief of Section
A. F. Jonas, M. D.
Associates—
C. C. Morrison, M. D.
C. R. Kennedy, M. D.
J. R. Nilsson, M. D.
Orthopedics
J. P. Lord, M. D.
Assistants in Surgery
Glenn Miller, M. D.
R. J. Stearns, M. D.
Assistant in Orthopedics
Robert D. Schrock, M. D.
II. Internal Medicine
Chief of Section,
W. O. Bridges, M. D.
Associates—
E. L. Bridges, M. D.
Rodney W. Bliss, M. D.
Asst., R. Allyn Moser, M. D.
III. Eye, Ear, Nose and Throat
Chief of Service,
Harold Gifford, M. D.
Associates—
J. M. Patton, M. D.
W. D. Callfas, M. D.
Asst., Sanford Gifford, M. D.

IV. Pediatrics
Chief of Service,
H. M. McClanahan, M. D.
Associates—
Clyde Moore, M. D.
H. B. Hamilton, M. D.
J. A. Henske, M. D.
V. Obstetrics
Chief Emeritus,
J. C. Moore, M. D.
Chief of Service,
W. H. Taylor, M. D.
Associate—
Earl C. Sage, M. D.
VI. Neuropsychiatry
Chief of Service,
G. A. Young, M. D.
Associate—
H. Wigton, M. D.
VII. Dermatology
Alfred Schalek, M. D.
VIII. Roentgenology
C. R. Kennedy, M. D.
IX. Pathology
W. B. Moody, M. D.

Address the Superintendent

Nebraska Methodist Episcopal Hospital

Corner Cuming and Thirty-sixth Sts. Omaha, Neb.

Omaha
Maternity
Hospital

No. 2204 St. Mary's Avenue
OMAHA - NEBRASKA

Telephone AT6345 *REGISTERED NURSES*

10th Year of Experience Rates Reasonable
Strictly Modern Service.

Private HOSPITAL and Maternity Home
2954 Apple Street
LINCOLN, NEBRASKA

Phone B4104 MRS. H. T. ROEDER,
Superintendent

WHEN IN OMAHA
STOP WITH US
Hotel Conant
Hotel Sanford
Hotel Henshaw

Our reputation of 20 years fair dealing is back of these hotels. Guests may stop at any one of them with the assurance of receiving honest value and courteous treatment.

CONANT HOTEL COMPANY

An Invitation to Physicians

Physicians in good standing are cordially invited to visit the Battle Creek Sanitarium and Hospital at any time for observation and study, or for rest and treatment.

Special clinics for visiting physicians are conducted in connection with the Hospital, Dispensary and various laboratories.

Physicians in good standing are always welcome as guests, and accommodations for those who desire to make a prolonged stay are furnished at a moderate rate. No charge is made to physicians for regular medical examination or treatment. Special rates for treatment and medical attention are also granted dependent members of the physician's family.

An illustrated booklet telling of the Origin, Purposes and Methods of the institution, a copy of the current "MEDICAL BULLETIN", and announcements of clinics, will be sent free upon request.

The Battle Creek Sanitarium
Room 101
BATTLE CREEK MICHIGAN

THE DANISH TREATMENT OF SCABIES

The ointment which Arthur M. Greenwood, Boston (Journal A. M. A., Feb. 9, 1924), describes is made as follows: 1. One kilogram of sublimed sulphur is mixed with 2 kg. of 50 per cent solution of potassium hydroxid (as free from water as can be obtained). Gentle heat is applied until reaction ceases and the solution becomes clear. When the process is complete, one should be sure that the sulphur is in excess to a slight degree. 2. Petrolatum, 225 gm., is mixed with wool fat, 225 gm., without heat. 3. To this mixture is added 375 gm. of the solution of sulphur and potash mentioned above. 4. To 40 gm. of 20 per cent sodium hydroxid solution is added 28 gm. of zinc sulphate. The mixture is agitated thoroughly until reaction ceases, poured on filter paper, and washed thoroughly; then the washed precipitate is added to the foregoing. 5. Liquid petrolatum is added to obtain a total weight of 1,000 gm. 6. Five grams of oil of bitter almond is added to check the somewhat disagreeable odor of hydrogen sulphid. The important elements in the ointment are the sulphids of potassium, on which its activity depends, a production of hydrogen sulphid taking place when the ointment is placed on the skin. The patient receives an ordinary cleansing bath, dries himself thoroughly, and afterwards rubs the whole of his body, except his head, carefully with the ointment.

Feeding the Ailing Infant

Pure, plain gelatine added to the baby's formula, not only makes the milk more digestible, but it also increases the nourishment obtainable by about 23%, according to the standard feeding tests conducted by Dr. T. B. Downey, Fellow at the Mellon Institute, University of Pittsburgh.

This addition of Knox Sparkling Gelatine to the milk diet is particularly recommended where infants are suffering from malnutrition, indigestion, regurgitation and vomiting, curdy stools, diarrhoea, constipation, colic or excessive gas formation.

Here is the most approved method of modifying baby's milk with Gelatine:

> Soak for ten minutes one level tablespoonful of Knox Sparkling Gelatine in ½ cup of cold milk taken from the baby's formula; cover while soaking; then place the cup in boiling water, stirring until gelatine is fully dissolved; add this dissolved gelatine to the regular formula.

For children and adults, follow the same method, but in the proportion of ½ teaspoonful of gelatine to a glass of milk.

In infant feeding the gelatine may be added to any regular formula prescribed by the physician.

To safeguard against impurity and disturbing acidity, it is essential to specify Knox Sparkling Gelatine, the Highest Quality for Health.

The physician's reference book of nutritional diets with recipes will be sent free to physicians or hospitals, upon request, if they will address the Knox Gelatine Laboratories, 429 Knox Avenue, Johnstown, N. Y.

Note: From the raw material to the finished package, the Family of Knox takes pride in producing the highest quality of Gelatine

The Nebraska Laboratory of Clinical Pathology

Dr. E. T. Manning
Manager

Dr. H. E. Eggers,
Consultant in
Pathology

Dr. J. T. Myers
Consultant in
Bacteriology and
Chemistry

792-96 Brandeis Theatre Building, Omaha, Nebraska

The Huse Publishing Company

Printers
Book Binders
Office Furniture
Office Supplies
Stationers

Norfolk - Nebraska

THE ADVANTAGES OF MEDICAL-SURGICAL CLINICS IN UNDERGRADUATE TEACHING

For one hour a week during the school year, Dr. Arthur Bloomfield of the department of medicine, and Robert T. Miller, Jr., Baltimore (Journal A. M. A., April 12, 1924), of the department of surgery, Johns Hopkins Medical School, have held a joint clinic, presenting some of the conditions lying between frank medicine and frank surgery. Some of the subjects for this medical-surgical conference have been abscess of the lung, diabetic gangrene, angina pectoris, acute nephritis with tonsillitis, postoperative pneumonia, toxic adenoma of the thyroid, and mesenteric thrombus. The author says: No one doubts the value of highly specialized teaching, but there is room for debate as to whether teaching so organized fulfills the whole duty of a medical school. These combined clinics have proved to be of distinct advantage as a method of teaching; furthermore, there has come a growing conviction that the underlying principle offers a much wider application, and that its more general application would prove of great help to the under-graduate student. It is pointed out that adoption on a moderate scale of this plan in clinical teaching would not involve great change, if any, in most curriculums; its radical adoption at present is not urged, for such action would be unwise without the certainty of sympathetic and intelligent cooperation and before experience with the method has developed its possibilities. Finally, in many instances combined teaching could accomplish the purpose in fewer hours than are required at present.

SWEDISH MISSION HOSPITAL

Telephone Webster 0157

24th and Pratt Streets **Omaha, Nebraska**

Staff
H. P. Hamilton, M. D., F. A. C. S., Pres.
R. W. Bliss, M. D., F. A. C. P., Vice Pres.
Paul H. Ellis, M. D., Secretary

Surgical Staff
H. P. Hamilton, M. D., F. A. C. S.
E. W. Powell, M. D.
R. Rix, M. D.
Alf. J. Brown, M. D., F. A. C. S.
C. H. Waters, M. D., F. A. C. S.
Max Emmert, M. D., F. A. C. S.

Oculists and Aurists
Chas. S. James, M. D., F. A. C. S.
W. P. Wherry, M. D., F. A. C. S.
W. P. Haney, M. D., F. A. C. S.
J. Calvin Davis, M. D.

Oral Surgeon
Wm. L. Shearer, M. D., F. A. C. S.

Internes
J. H. McMillin
C. H. Folsom

Gynecologist
Palmer Findley, M. D., F. A. C. S.

Medical Staff
R. W. Bliss, M. D., F. A. C. P.
Paul H. Ellis, M. D.
Warren Thompson, M. D.
George P. Pratt, M. D., F. A. C. P.

General Staff
E. J. Griffin, M. D.
George W. Prichard, M. D.
Glenn D. Whitcomb, M. D.

Pediatrician
Clyde Moore, M. D.

Obstetrician
J. F. Hyde, M. D.

Roentgenologist
Chas. H. Ballard, M. D.

Pathologist
E. T. Manning, M. D.

For particulars, write to the Hospital.

GUINEA PIGS

Your Order Filled Promptly

W. J. Whitaker
5119 Nicholas Street
OMAHA NEBRASKA
Telephone Walnut 1748

"The well-trained, properly equipped, experienced general practitioner of ability, character, personality, is a fundamentally valuable person. He is a good diagnostician. He sees his patient as a whole. He knows his peculiarities and circumstances. He can decide when to refer him to a specialist and when to protect him against the very real danger which is threatened by a narrowly specialist point of view.

The gorilla sticks to one wife throughout his life, which seems strong disproof of the evolutionary theory.—Greenville Piedmont.

We supply your needs for the coming year

MAUL BROS.
LINCOLN PRINTING COMPANY

Thank

Two words easy to say. Yes, we know them well and when used are said with an expression of gratitude or obligation.

You--

236 No. 13th Street, Lincoln, Nebr.

X-RAY APPARATUS

Slightly Used

1 Kelley-Koett, Constant Potential Transformer

Capacity, 100 M. A., 80 K. V., 220 V., 60 Cy., complete with cabinet, (gray), switch-board, Coolidge Tube Control, Coolidge Tube Transformer, Circuit Breaker, Timer.

This apparatus has had the best of care and is in A No. 1 condition.

If you are looking for a bargain this is it

$850.00

1 Victor Coolidge Tube Transformer

1 Victor Coolidge Tube Control

1 Victor Snook, Transformer, Remote Control

$850.00

1 Wappler High Frequency Apparatus

Oak Cabinet. This is a good buy

$300.00

The above prices are net for cash—if time is desired a small charge is made

Western X-Ray Company

320 So. 19th St., Omaha, Nebr.

402 Equitable Bldg., Des Moines, Ia.

Classified Advertisements

A Practical Course in Standardized Physiotherapy, under auspices of Biophysical Research Dept. of Victor X-Ray Corporation, is now available to physicians. Offers a highly practical knowledge of all the fundamental principles that go to make up the standards of modern scientific physiotherapeutic work. Course requires one week's time. For further information apply to J. F. Wainwright, Registrar, 236 So. Robey St., Chicago, Ill.

SITUATIONS WANTED

WANTED: Salaried Appointments for Class A Physicians in all branches of the Medical Profession. Let us put you in touch with the best man for your opening. Our nation-wide connections enable us to give superior service. Aznoe's National Physicians' Exchange, 30 North Michigan, Chicago. Established 1896. Member The Chicago Association of Commerce.

COLLECTION SERVICE
AMERICAN MEDICAL BOARD OF ADJUSTERS

First National Bank Building, CHICAGO. Guaranteed Delinquent Collection Service. Anywhere U. S. A. (Medical Profession Exclusively). Debtors pay you direct. Litigation avoided. Adjustments encouraged. No "Agency" methods. Financially responsible. WRITE!

For Sale

Office fixtures for sale, as I have retired:
One Galvanic and Faradic Cabinet Battery.
One Violet Ray Machine.
One McDonald Chair in good condition.
One Globe Nebulizer.
One metal and glass table, three shelves.
One Set Fibre splints.
One Betz Hot air machine. Arm and Leg.
F. E. Calkins, Fremont, Nebr.

THE WORLD IMPROVES

"Safety pins," a Cleveland (Ohio) doctor declares, "have killed more babies than firearms." Shooting babies does seem to have gone out of fashion.—Springfield Union.

Superior Products

Neo-Arsphenamine
DERMA-TOLOGICAL RESEARCH LAB.

GUARANTEE

EVERY batch of Neoarsphenamine, D. R. L., now made is guaranteed to have met a test for toleration almost 75% above governmental requirements.

Here is uniformity as remarkable as it is unprecedented.

In therapeutic results this unusual product compares favorably with Arsphenamine.

Sulpharsphenamine

THE Dermatological Research Laboratories were the first in America to manufacture Sulpharsphenamine, as well as Arsphenamine and Neoarsphenamine.

This product is of a quality that justly entitles it to be listed with the D. R. L. line of superior antisyphilitic drugs.

Potassium Bismuth Tartrate With Butyn

PURITY of compound, high bismuth content and better absorption and elimination, coupled with practically complete freedom from pain, characterize the D. R. L. product.

Preferable to mercury in most cases with greater spirocheticidal power and lower toxicity.

Insist upon D.R.L. products from your dealer.

Monograph on "The Treatment of Syphilis" sent on request.

THE DERMATOLOGICAL RESEARCH LABORATORIES
1720 Lombard Street, Philadelphia

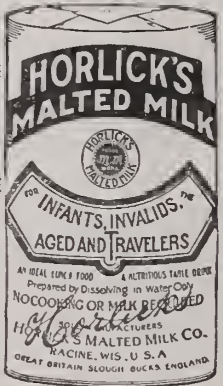
THE ABBOTT LABORATORIES
4753 Ravenswood Ave., Chicago

New York San Francisco Seattle Los Angeles
Toronto Bombay

ST. ELIZABETH'S HOSPITAL

Management: Sisters of St. Francis
11 & South Streets
LINCOLN, NEBRASKA

Departments of Medicine, Surgery, Obstetrics, Pediatrics, Orthopedics and Neurology
A Training School for Nurses is maintained in connection with the hospital


HORLICK'S
MALTED MILK
FOR INFANTS, INVALIDS, THE AGED AND TRAVELERS
Horlick's
HORLICK'S MALTED MILK CO.
RACINE, WIS. U.S.A.

THE Original

AVOID Imitations

FOR INFANTS, GROWING CHILDREN

FOR NURSING MOTHERS

"*Horlick's*" is readily adapted to individual infant feeding, nourishes and strengthens delicate children, and is used with benefit as a nourishing food-drink for nursing mothers. Prescribed by the medical profession over one-third of a century.

Samples and literature prepaid upon request.

Horlick's Malted Milk Co.
RACINE, WIS.

HELIOTHERAPY

Generations of laymen as well as physicians have somehow assumed that part of the beneficial effects of outdoor life is attributed to sunshine. The influence of sunlight on health and disease is being unravelled gradually. An impetus to the study has been derived from the investigations of the biologic actions of light, particularly as they are related to dietary deficiencies. It is now clearly established that exposure to ultraviolet radiations will protect against the effects of the lack of antirachitic factors in the diet. Furthermore, foods may acquire antirachitic properties by being irradiated. Recent experiments on the effect of radiation on the bactericidal power of the blood indicate that the exposure of the skin of animals to a source of ultraviolet radiation gives an increased bactericidal power to the blood and serum. It has been found that irradiation for purposes of treatment must be carefully graded, since excessive exposures cause a deterioration of the blood no less striking than the improvement obtained with smaller doses. (Jour. A. M. A., May 16, 1925, p. 1498).

FOR THE INUNCTION TREATMENT
OF SYPHILIS

MERCURETTES

CLEANLY ~ EFFECTIVE ~ CONVENIENT

MERCURETTES will appeal to your patients. They are made of cacao butter in oblong blocks delicately and pleasantly perfumed and their use is not betrayed by the odor and messiness suggesting blue ointment.

Each block or briquette contains 50 grains of metallic mercury very finely subdivided and thoroughly distributed throughout the cacao butter base. It is wrapped in wax tissue and tinfoil.

Any required dose for a mercurial rub can be easily and accurately obtained without soiling the fingers, by cutting the block through the wrappers into the desired number of parts.

Mercurettes are supplied in boxes of 6 blocks and in bulk in packages of 50 and 100 blocks. Your druggist has Mercurettes in stock.

Literature on Mercurettes will be gladly sent to physicians on request.

PARKE, DAVIS & COMPANY
DETROIT ~ MICHIGAN

MERCURETTES, P. D. & CO., ARE INCLUDED IN N. N. R. BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE A. M. A.

POST GRADUATE COURSES
In All Branches for
PHYSICIANS AND SURGEONS
LABORATORY AND X-RAY
Training for PHYSICIANS and TECHNICIANS
Graded Courses in
EYE, EAR, NOSE AND THROAT
For further information address
POST GRADUATE HOSPITAL AND MEDICAL SCHOOL
2400 S. Dearborn St. Chicago, Illinois

Kessler School of Lip-Reading for Deafened Adults.

Private lessons. Conversation classes for application work. Practice department. Choice of methods. School open throughout the year. Write for particulars.

Emma B. Kessler, A. B.
203 North 20th Street. Omaha, Nebraska.

IMMANUEL HOSPITAL

34TH AND MEREDITH AVENUE
Phone Kenwood 1522
OMAHA, NEBR.

REV. EMIL CHINLUND, S. T. D.
Superintendent

SISTER FRIDA THDR, R. N.
Supt. of Nurses

SURGICAL STAFF

B. B. Davis, M. D.	Surgeon In Chief
C. A. Hull, M. D.	Surgeon
Jno. R. Nilsson, M. D.	Surgeon
Herbert H. Davis, M. D.	Surgeon
F. S. Dwens, M. D.	Eye and Ear
A. B. Lindquist, M. D.	Eye and Ear
Clarence Rubendall, M. D.	Eye and Ear
D. R. Dwen, M. D.	Eye and Ear
J. Jay Keegan, M. D.	Neurological Surgeon
Louis E. Moen	Proctologist
A. Hugh Hipple, D. D. S., M. D. S.	Dentist
A. F. Tyler, M. D.	X-Rayologist
J. R. Blackman, M. D.	X-Rayologist

MEDICAL STAFF

W. F. Milroy, M. D.	Consult Phys.
Wilson Drton Bridges, M. D.	Consult Phys.
H. M. McClanahan, M. D.	Consult Phys.
J. H. Vance, M. D.	Attend. Phys.
B. W. Christie, M. D.	Attend. Phys.
Julius Johnson, M. D.	Attend. Phys.
Geo. P. Pratt, M. D.	Attend. Phys.
G. W. Pritchard, M. D.	Attend. Phys.
E. W. Bantin, M. D.	Attend Phys.
E. T. Manning, M. D.	Attend. Phys., Pathologist
H. A. Wigton, M. D.	Nervous and Mental Diseases
Alfred Schalek, M. D.	Skin-Diseases
C. W. Pollard, M. D.	Dbstertrician

Waukesha Springs Sanitarium

FOR THE CARE AND TREATMENT OF
NERVOUS DISEASES
BYRON M. CAPLES, M. D., MEDICAL DIRECTOR
FLOYD W. APLIN, M. D. L. H. PRINCE, M. D.
Building Absolutely Fireproof WAUKESHA, WIS.

THE EXCELSIOR SPRINGS SANITARIUM
EXCELSIOR SPRINGS, MO.

For the treatment of Brights Disease, Diabetes, Rheumatism and Gastro Intestinal diseases, etc. Diet—Mineral waters—Mineral water Baths—Physiotherapy.

R. W. Prather, M. D., Supt.,
Medical Directors — C. H. Suddarth, M. D.; J. E. Baird, M. D.; J. E. Musgrove, M. D.

GET IT DONE

It isn't the job we intend to do,
Or the labor we've just begun,
That puts us right on the balance sheet,
It's the work we have really done.
Our credit is built upon things we do,
Our debit on things we shirk;
The man who totals the biggest plus
Is the man who completes his work.
Good intentions do not pay bills;
It is easy enough to plan.
To wish is the play of an office boy,
To do is the job of a man.

(Reprinted from the Vulcan Bulletin)

GASTRON

An aqueous-acid-glycerin extract of the entire mucosa of the fresh stomach, including the pyloric, containing the peptic enzymes—proteolytic and milk-curdling, the activated principles and naturally associated soluble organic and inorganic constituents.

GASTRON is a stable, potent fluid, free from alcohol and free from sugar, with an acidity approximately of 0.25% absolute hydrochloric acid, loosely bound to protein, and twenty-five per cent pure glycerin.

GASTRON is put up in 6 oz. unlettered bottles, without literature.

Fairchild Bros. & Foster
New York

SWEDISH MISSION HOSPITAL

Telephone Webster 0157

Staff
H. P. Hamilton, M. D., F. A. C. S., Pres.
R. W. Bliss, M. D., F. A. C. P., Vice Pres.
Paul H. Ellis, M. D., Secretary

Surgical Staff
H. P. Hamilton, M. D., F. A. C. S.
E. W. Powell, M. D.
R. Rix, M. D.
Alf. J. Brown, M. D., F. A. C. S.
C. H. Waters, M. D., F. A. C. S.
Max Emmert, M. D., F. A. C. S.

Oculists and Aurists
Chas. S. James, M. D., F. A. C. S.
W. P. Wherry, M. D., F. A. C. S.
W. P. Haney, M. D., F. A. C. S.
J. Calvin Davis, M. D.

Oral Surgeon
Wm. L. Shearer, M. D., F. A. C. S.

Internes
J. H. McMillin
C. H. Folsom

24th and Pratt Streets **Omaha, Nebraska**

Gynecologist
Palmer Findley, M. D., F. A. C. S.

Medical Staff
R. W. Bliss, M. D., F. A. C. P.
Paul H. Ellis, M. D.
Warren Thompson, M. D.
George P. Pratt, M. D., F. A. C. P.

General Staff
E. J. Griffin, M. D.
George W. Prichard, M. D.
Glenn D. Whitcomb, M. D.

Pediatrician
Clyde Moore, M. D.

Obstetrician
J. F. Hyde, M. D.

Roentgenologist
Chas. H. Ballard, M. D.

Pathologist
E. T. Manning, M. D.

For particulars, write to the Hospital.

THE BISHOP
Clarkson Memorial Hospital
2100 Howard Street, OMAHA, NEBR.

Rt. Rev. Ernest V. Shayler, President.
F. H. Davis, Vice-President
William Ritchie, Jr., Secretary and Treasurer.

ATTENDING STAFF

President, J. P. Lord, M. D.
Secretary, C. O. Rich, M. D.

Surgery:
J. E. Summers, M. D.
C. O. Rich, M. D.
B. B. Davis, M. D.
C. A. Hull, M. D.
C. A. Roeder, M. D.
A. C. Stokes, M. D.
A. J. Brown, M. D.
C. H. Waters, M. D.

Urologist:
Edwin Davis, M. D.

Internal Medicine:
A. W. Edmiston, M. D.
A. D. Dunn, M. D.
W. N. Anderson, M. D.
W. Y. Thompson, M. D.
G. P. Pratt, M. D.

Orthopedic Department:
J. P. Lord, M. D.
R. D. Schrock, M. D.

Eye, Ear, Nose, Throat:
J. M. Patton, M. D.
J. B. Potts, M. D.
S. R. Gifford, M. D.
W. A. Cassidy, M. D.

Pediatrics:
J. A. Henske, M. D.

Obstetrics:
E. C. Sage, M. D.
C. F. Moon, M. D.

Consulting Staff
W. O. Bridges, M. D.
H. Gifford, M. D.
Miss Homer C. Harris, R. N., Superintendent

Monel Top Table

Constructed with 16x20 inch rustless, stainless Monel metal top, this table is ideal for office utility service. The base is made with pressed steel legs, strongly braced by steel bars at the top and a "White-Kraft" steel shelf at the bottom. The top is protected on the sides and back by a white enameled guard rail welded to the base at four points.

6CJ801. **Monel Metal Top Utility Table** *special*.............................. **$10.95**

The Frank S. Betz Company
HAMMOND, INDIANA
6-8 W. 48th St., New York
3213 Swiss Ave., Dallas
634 S. Wabash Ave., Chicago

YOUR SOCIETY

If your society is on the bum,
Damn the Secretary;
If your members will not come,
Damn the Secretary;
Don't take hold and do your part,
Don't help give the thing a start;
Show 'em that you are smart—
Damn the Secretary.

If the programs are a frost,
Damn the Secretary;
Don't help put the thing across,
Damn the Secretary;
If the grub's not what you like,
Threaten to go on a strike;
Don't help, for the love of Mike—
Damn the Secretary.

When you get your bills for dues,
Damn the Secretary;
When you're asked to help, refuse.
Damn the Secretary;
Let him do it—he gets paid—
Why should he be seeking aid?
That is why his job is made—
Damn the Secretary.

—Victor Ridenour, in The Artisan.

The University of Nebraska

COLLEGE OF MEDICINE

OFFERS

Splendid Opportunities for Medical Education

Medical Campus, University of Nebraska College of Medicine, Omaha, showing University Hospital, North and South Laboratory Buildings, Conkling Hall (Nurses' Home).

The University Hospital contains 130 beds entirely devoted to teaching. The Out-Patient Service, located in the South Laboratory Building, is under adequate supervision and is fully equipped. The University Hospital receives over 2600 cases annually and the Out-Patient Service over 25,000 visits annually.

Classes in the Medical College are limited in enrollment to those students showing a specific aptitude for the study of Medicine and who maintain a high standard of scholarship. Equipment and laboratory space permit the acceptance of only 96 freshmen students. Applicants will be accepted for registration on the basis of recommendations plus a high standard of scholarship as shown by premedical college and high school credentials submitted.

For Information Address, The Dean

University of Nebraska College of Medicine

Forty-Second and Dewey Avenue **OMAHA, NEBRASKA**

BOLEN
Abdominal Supporters and Binders
Elastic Hosiery, Laced Linen Mesh
Stockings, etc.
PATENTED

Maternity Binder

Supporters for every purpose, Enteroptosis, Nephroptosis, Obesity, Post-Operative, Hernia, Pregnancy, Sacro-Iliac, etc.

Special Attention Given to High Operations

Everything made to your order and orders filled within 48 hours after they reach our office. WRITE FOR DESCRIPTIVE LITERATURE

BOLEN MANUFACTURING COMPANY
1712 Dodge Street Omaha, Nebraska

Dr. Michael G. Wohl's
Laboratory of Clinical
Pathology

517-18 CITY NAT'L BK. BLDG.,
Omaha, Nebr.

MERCY HOSPITAL
Council Bluffs, Ia.

Chemical, Microscopical, Bacteriological and Metabolic Determinations.

ROENTGEN-RAY TREATMENT OF HYPERTHYROIDISM

A study made by Thomas A. Groover, Arthur C. Christie and Edwin A. Merritt, Washington, D. C. (Journal A. M. A., Nov. 29, 1924), of the results of roentgen-ray treatment of hyperthyroidism in individual cases and by means of the incomplete statistics so far available indicates that this method will probably furnish about the same percentage of permanent cures of exophthalmic goiter as surgical treatment in the best hands. The roentgen-ray method has the following advantages: (a) There is no mortality resulting from the treatment; (b) patients will submit to this method of treatment at a much earlier stage of the disease than to operation: (c) the method is applicable to inoperable and to postoperative cases. Patients with hyperthyroidism should first receive roentgen-ray treatment, and be operated on only if the disease fails to respond to this treatment. This would not apply to patients with toxic adenoma with mild hyperthyroidism who have no vascular or other diseases which render them inoperable. The operative mortality in this class of cases is very low, and surgery has the great advantage of removing the tumor. Our general impression is that roentgen-ray treatment is not so useful in toxic adenoma as in exophthalmic goiter, but that it may be of great advantage in rendering very toxic cases operable and in the treatment of cases that are inoperable for reasons other than the hyperthyroidism.

TYPHOID VACCINE

The typhoid vaccine now in general use, is usually made from a type of organism of low virulence, properly sterilized by heat and containing preservatives, and is administered in doses of three injections, seven days apart. Immunity apparently appears about the end of the first week after the first or second injection. The blood serum of the vaccinated person has then acquired immunizing properties. These properties increase, and may reach their maximum shortly after the third injection. It seems to be agreed that this immunity, once acquired, may last for several years; but there is no absolute certainty that a person immunized may not be subsequently infected during this period and typhoid fever produced. (Jour. A. M. A., Mar. 21, 1925, p. 916).

Insulin Squibb

INSULIN is the active anti-diabetic principle of the pancreas.

Insulin is the one and only anti-diabetic specific.

All Insulin manufactured in the United States is prepared under the license and control of the University of Toronto.

INSULIN SQUIBB is the name given to the Insulin manufactured by E. R. Squibb & Sons.

INSULIN SQUIBB, in common with other brands of Insulin, sold under whatever name in the United States, must conform to standards and requirements established by the Insulin Committee of the University of Toronto.

INSULIN SQUIBB is supplied in 5-Cc. and 10 Cc. vials in three strengths:—

5 Cc. 10 Cc.
50 and 100 units (10 units per Cc.)—Blue label
100 and 200 units (20 units per Cc.)—Yellow label
200 and 400 units (40 units per Cc.)—Red label

Unless otherwise specified the 5 Cc. vial will always be supplied.

[*Complete Information Upon Request*]

E·R·SQUIBB & SONS, NEW YORK
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858.

The Radium Hospital of Omaha

For the treatment of Cancer, Tumor and precancerous conditions. Fifty rooms devoted entirely to Radium Treatment.

Complete X-ray Equipment

D. T. QUIGLEY, M. D.
Director

34th and Farnam Streets. Omaha, Neb.

The new plant of the Abbott Laboratories, pictured below, and now nearly ready, will be, when occupied, the finest complete pharmaceutical and research plant in the world. Here the newest synthetic, medicinal chemicals are made in large quantities by improved processes, insuring purity and accuracy. Here also are extracted from the crude drugs the medicinal principles used largely throughout the pharmaceutical industry as well as by the medical profession.

Larger quarters will be provided for the extensive research work now being carried on by a large staff of chemists and new buildings are being provided for the manufacture of the well-known Abbott pharmaceutical specialties.

The administrative office of The Abbott Laboratories, located for many years in Ravenswood, will be moved about October 1st of this year to the new plant. The postoffice address will be Waukegan, Ill., 25 miles north of Chicago on the C. &. N. W. R. R. About 24 acres of ground are owned by the Abbott Company to provide for the future expansion of their business.

"Frederick Stearns and Company have founded at the University of Michigan, the Frederick Kimball Stearns Memorial Fellowship in Medicine, in honor of the late Frederick Kimball Stearns.

Mr. Stearns was a life-long patron of the Arts and Sciences, and had shown a special interest in the progress of the University of Michigan. The Stearns' Botanical Gardens, the Stearns' Fellowship in Pharmacy and the Stearns' Collection of Musical Instruments, the most complete collection of its kind in the world, were evidences of his interest and generosity.

While the medical fellowship is to be used at the direction of the University medical authorities, the work during the coming year will be devoted to researches on Insulin and Insulin therapy. The study of this problem has been of the greatest interest also in the Scientific Laboratories of Frederick Stearns and Company in the course of the development of their product, "Insulin-Stearns," which has been so extensively used in the treatment of diabetes."

Lederle

POLLEN ANTIGEN

—in stock—
Immediate Shipment

FREE

Diagnostic tests of causative pollens of your locality.

DROP US A POSTAL CARD.

New
Complete Rabies
Treatment—14 Dose
in Stock—$20.25

DONLEY STAHL Co.
DEPENDABLE SERVICE

THE PHYSICIAN'S SUPPLY HOUSE
Lincoln Nebr.

Trademark Registered **STORM** Trademark Registered

Binder and Abdominal Supporter
(PATENTED)

Trade Mark Reg.

Trade Mark Reg.

For Men, Women and Children

For Ptosis, Hernia, Pregnancy, Obesity, Relaxed Sacro-Iliac Articulations, Floating Kidney, High and Low Operations, etc.

Ask for 36-page Illustrated Folder.
Mail orders filled at Philadelphia only—within 24 hours.

Katherine L. Storm, M. D.
Originator, Patentee, Owner and Maker
1701 Diamond Street Philadelphia

I. Surgery and Gynecology
Chief of Section
A. F. Jonas, M. D.
Associates—
C. C. Morrison, M. D.
C. R. Kennedy, M. D.
J. R. Nilsson, M. D.
Orthopedics
J. P. Lord, M. D.
Assistants in Surgery
Glenn Miller, M. D.
R. J. Stearns, M. D.
Assistant in Orthopedics
Robert D. Schrock, M. D.
II. Internal Medicine
Chief of Section,
W. O. Bridges, M. D.
Associates—
E. L. Bridges, M. D.
Rodney W. Bliss, M. D.
Asst., R. Allyn Moser, M. D.
III. Eye, Ear, Nose and Throat
Chief of Service,
Harold Gifford, M. D.
Associates—
J. M. Patton, M. D.
W. D. Callfas, M. D.
Asst., Sanford Gifford, M. D.

IV. Pediatrics
Chief of Service,
H. M. McClanahan, M. D.
Associates—
Clyde Moore, M. D.
H. B. Hamilton, M. D.
J. A. Henske, M. D.
V. Obstetrics
Chief Emeritus,
J. C. Moore, M. D.
Chief of Service,
W. H. Taylor, M. D.
Associate—
Earl C. Sage, M. D.
VI. Neuropsychiatry
Chief of Service,
G. A. Young, M. D.
Associate—
H. Wigton, M. D.
VII. Dermatology
Alfred Schalek, M. D.
VIII. Roentgenology
C. R. Kennedy, M. D.
IX. Pathology
W. B. Moody, M. D.

Address the Superintendent

Nebraska Methodist Episcopal Hospital
Corner Cuming and Thirty-sixth Sts. Omaha, Neb.

Omaha
Maternity
Hospital

No. 2204 St. Mary's Avenue
OMAHA - NEBRASKA

Telephone AT6345 *REGISTERED NURSES*

10th Year of Experience Rates Reasonable
Strictly Modern Service.

Private HOSPITAL and Maternity Home
2954 Apple Street
LINCOLN, NEBRASKA

Phone B4104 MRS. H. T. ROEDER, Superintendent

WHEN IN OMAHA
STOP WITH US
Hotel Conant
Hotel Sanford
Hotel Henshaw

Our reputation of 20 years fair dealing is back of these hotels. Guests may stop at any one of them with the assurance of receiving honest value and courteous treatment.

CONANT HOTEL COMPANY

An Invitation to Physicians

Physicians in good standing are cordially invited to visit the Battle Creek Sanitarium and Hospital at any time for observation and study, or for rest and treatment.

Special clinics for visiting physicians are conducted in connection with the Hospital, Dispensary and various laboratories.

Physicians in good standing are always welcome as guests, and accommodations for those who desire to make a prolonged stay are furnished at a moderate rate. No charge is made to physicians for regular medical examination or treatment. Special rates for treatment and medical attention are also granted dependent members of the physician's family.

An illustrated booklet telling of the Origin, Purposes and Methods of the institution, a copy of the current "MEDICAL BULLETIN", and announcements of clinics, will be sent free upon request.

The Battle Creek Sanitarium
Room 101
BATTLE CREEK MICHIGAN

THE SELECTION OF A PHYSICIAN

The selection of a physician for an operation or as a family doctor, is usually made with some care. We consult those who have employed physicians and are governed largely by their recommendations. But having selected a physician, we follow his advice. We trust him even to the extent of submitting to operations that may have serious results.

The point is, we trust the man who knows.

Now, doctor, the institutions and the firms advertised in this Journal were carefully investigated before their announcements were printed here. The medicinal products were submitted to laboratory tests before they were accepted by the Council on Pharmacy and Chemistry.

On the same principle that patients trust you about matters with which you are informed, so your publishers urge you to trust their judgment and buy goods from the advertisers who are admitted to these pages. Other considerations being equal, you should give your advertisers preference because you know they are believed to be trustworthy. Don't speculate or experiment! Trust the approved firms and goods!

DR. BENJ. F. BAILEY,
President and Chief of Staff.

DR. MAY L. FLANAGAN,
Vice President and Assistant Chief of Staff.

MR. W. A. SELLECK,
Secretary and Treasurer.

DR. PAUL A. ROYAL,
Psychiatry Department.

DR. GENO E. BEERY,
Laboratory and X-Ray Department.

DR. CLEVELAND J. WHITE,
Internal Medicine Department.

DR. K. S. J. HOHLEN,
Surgical Department.

DR. FREDERICK F. TEAL,
DR. S. G. ZEMER,
Eye, Ear, Nose & Throat Department.

EDNA M. CRANDELL, R. N.
Superintendent of Nurses.

GREEN GABLES

The Dr. Benjamin F. Bailey Sanatorium

LINCOLN *NEBRASKA*

This institution has its own brick and stone buildings situated in a park of 25 acres, permitting a complete classification of cases, and having every modern convenience.

THE MAIN BUILDING is thoroughly equipped for all noncontagious chronic diseases, with special attention being given to all metabolic diseases, including diabetes, with the insulin treatment. Special development in the laboratory and the diet kitchen makes the systematic and mathematical study and treatment of these diseases possible.

THE FIRE-PROOF ANNEX to the main building just completed, furnishes a modern and complete operating department, delivery department, nursery and examination quarters.

REST COTTAGE, in a distant part of the grounds, is for the reception of mental cases, requiring personal care and individual study. It is recognized that the mental case has a much better opportunity for restoration to health under conditions that permit of a thorough study of both psychic and bodily states.

We desire the profession to have a distinct understanding of the intent of this institution and that they may understand that it is operated entirely for their convenience and service.

OUR MOTTO:

The Ethical with Efficiency and Reasonable Results

The Nebraska Laboratory of Clinical Pathology

Dr. E. T. Manning
Manager

Dr. H. E. Eggers,
Consultant in
Pathology

Dr. J. T. Myers
Consultant in
Bacteriology and
Chemistry

792-96 Brandeis Theatre Building, Omaha, Nebraska

The
Huse Publishing
Company

Printers
Book Binders
Office Furniture
Office Supplies
Stationers

Norfolk - Nebraska

RUPTURE OF MUSCLES AND TENDONS

Edgar L. Gilcreest, San Francisco (Jr. A. M. A., June 13, 1925), says that a review of the literature reveals that comparatively little has been written in English on the important subject of rupture of muscles and tendons. He is convinced that these accidents occur more frequently than is generally supposed and that the condition is usually undiagnosed or diagnosed incorrect, resulting in valuable loss of time before operation. The order of frequency of rupture of muscles and tendons he believes to be: Achilles tendon, extensor quadriceps; biceps, and triceps of the arm; rectus abdominis, suprapinatus and the adductors of the thigh, trapezius, pectoralis major and minor. The etiology and mechanism that produces a rupture of a muscle or tendon is discussed. Many cases treated under the caption of sacro-iliac sprain or lumbago, Gilcreest believes, are really partial rupture of some of the deep back muscles or their fascia. The treatment is surgical. and if taken in time the prognosis is good.

The WILLOWS
MATERNITY
SANITARIUM

A superior seclusion maternity home and hospital for unfortunate young women. Patients accepted any time during gestation. Adoption of babies when arranged for. Prices reasonable.

Write for 90-page illustrated booklet.

The Willows
2929 Main St.
Kansas City, Mo.

GUINEA PIGS
Your Order Filled Promptly

W. J. Whitaker
5119 Nicholas Street
OMAHA · NEBRASKA
Telephone Walnut 1748

Your Advertisers are Dependable

UNIVERSAL FAVORITE

"Yes, my friends." said the theological lecturer, "some admire Moses, who instituted the old law; some, Paul, who spread the new. But after all, which character in the Bible has had the largest following?"

As he paused, a voice from the back bench shouted: "Ananias."—Columbia (S. C.) State.

We supply your needs for the coming year

MAUL BROS.
LINCOLN PRINTING COMPANY

Thank
Two words easy to say. Yes, we know them well and when used are said with an expression of gratitude or obligation.
You--

236 No. 13th Street, Lincoln, Nebr.

X-RAY APPARATUS

Slightly Used

1 Kelley-Koett, Constant Potential Transformer

Capacity, 100 M. A., 80 K. V., 220 V., 60 Cy., complete with cabinet, (gray), switch-board, Coolidge Tube Control, Coolidge Tube Transformer, Circuit Breaker, Timer.

This apparatus has had the best of care and is in A No. 1 condition.

If you are looking for a bargain this is it

$850.00

1 Victor Coolidge Tube Transformer

1 Victor Coolidge Tube Control

1 Victor Snook, Transformer, Remote Control

$850.00

1 Wappler High Frequency Apparatus

Oak Cabinet. This is a good buy

$300.00

The above prices are net for cash—if time is desired a small charge is made

Western X-Ray Company

320 So. 19th St., Omaha, Nebr.

402 Equitable Bldg., Des Moines, Ia.

DR. BENJ. F. BAILEY,
President and Chief of Staff.

DR. MAY L. FLANAGAN,
Vice President and Assistant Chief of Staff.

MR. W. A. SELLECK,
Secretary and Treasurer.

DR. PAUL A. ROYAL,
Psychiatry Department.

DR. GENO E. BEERY,
Laboratory and X-Ray Department.

DR. CLEVELAND J. WHITE,
Internal Medicine Department.

DR. K. S. J. HOHLEN,
Surgical Department.

DR. FREDERICK F. TEAL,
DR. S. G. ZEMER,
Eye, Ear, Nose & Throat Department.

EDNA M. CRANDELL, R. N.
Superintendent of Nurses.

GREEN GABLES

The Dr. Benjamin F. Bailey Sanatorium

LINCOLN *NEBRASKA*

This institution has its own brick and stone buildings situated in a park of 25 acres, permitting a complete classification of cases, and having every modern convenience.

THE MAIN BUILDING is thoroughly equipped for all noncontagious chronic diseases, with special attention being given to all metabolic diseases, including diabetes, with the insulin treatment. Special development in the laboratory and the diet kitchen makes the systematic and mathematical study and treatment of these diseases possible.

THE FIRE-PROOF ANNEX to the main building just completed, furnishes a modern and complete operating department, delivery department, nursery and examination quarters.

REST COTTAGE, in a distant part of the grounds, is for the reception of mental cases, requiring personal care and individual study. It is recognized that the mental case has a much better opportunity for restoration to health under conditions that permit of a thorough study of both psychic and bodily states.

We desire the profession to have a distinct understanding of the intent of this institution and that they may understand that it is operated entirely for their convenience and service.

OUR MOTTO:

The Ethical with Efficiency and Reasonable Results

Bottles — *White Enamel Furniture* — *Bandages*

We supply on Short Notice—

Upjohn's Pharmaceuticals
Lloyd's Specifics
Diphtheria Antitoxin
Biologicals
Harrower Products
Genuine Luer Syringes
Sorensen Suction Apparatus
Bausch & Lomb Microscopes
and accessories
Etc. Etc. Etc.

Rubber Goods — *Surgical Instruments*

KOSTKA DRUG CO.
PHYSICIANS' SUPPLIES
143 SO. 11. LINCOLN, NEB.

Cotton — *Pills*

The
Huse Publishing Company

Printers
Book Binders
Office Furniture
Office Supplies
Stationers

Norfolk - Nebraska

WE SERVE YOU BEST
Capital Engraving Co.
DESIGNERS PHOTO ENGRAVERS
SCHOOL ANNUALS
ZINC ETCHINGS
COPPER HALFTONES
ZINC ENAMEL HALFTONES
B.4178
319 SO.12
LINCOLN, NEBR.

SCIATICA

A writer in the Therapeutic and Dietetic Age claims that sciatica is often relieved by five grains of sodium bicarbonate at bedtime, followed in the morning with a saline laxative. Many cases of sciatica are due to a distended colon.

DIGITALIS

Tieken (Clinical Med.) offers the following suggestion: In estimating doses of digitalis, do not forget that a tablespoonful of the infusion is equal to 35 minims of the tincture.

The Nebraska Laboratory of Clinical Pathology

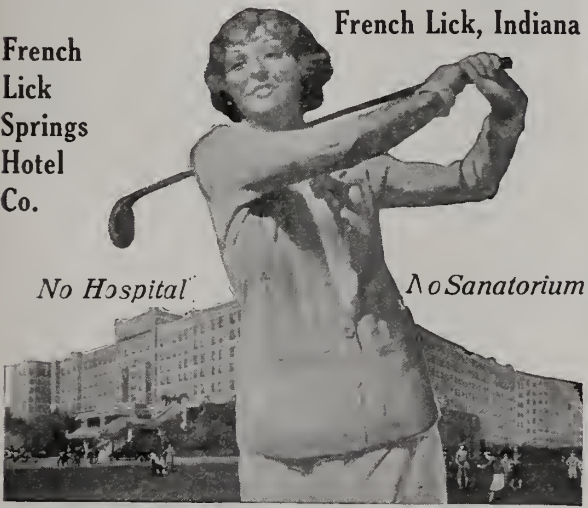
Dr. E. T. Manning
Manager

Dr. H. E. Eggers,
Consultant in
Pathology

Dr. J. T. Myers
Consultant in
Bacteriology and
Chemistry

792-96 Brandeis Theatre Building, Omaha, Nebraska

Open all the Year
With
Pluto Spring Flowing All the Time



French Lick, Indiana

French
Lick
Springs
Hotel
Co.

No Hospital *No Sanatorium*

SIX HUNDRED AND FIFTY ROOMS
(ALL OUTSIDE) IN OUR HOTEL

A place where your patients can find attractive surroundings with adequate medical service and supervision.

Dunning S. Wilson, M. D., Ky. U. of L., '99, is in charge of the Medical Department, which is equipped with complete X-ray, actinic ray, chemical and bacteriological laboratories for diagnostic and therapeutic work.

When your patients are tired of home or hospital send them to French Lick for final recuperation.

Write for Booklet.

MIDWEST OPTICAL CO.

Prescription Work
of the
Highest Quality

OMAHA, NEBR.

The Management of an Infant's Diet

Malnutrition, Marasmus, Infantile Atrophy, Athrepsia

Mellin's Food	**8 level tablespoonfuls**
Skimmed Milk (1% fat)	**9 fluidounces**
Water	**15 fluidounces**

This mixture contains 56.61 grams of carbohydrates, thus supplying material that is utilized rapidly for heat and energy. The predominating carbohydrate is MALTOSE, which has the highest point of assimilation of any of the sugars, is immediately available as fuel and may be safely given in comparatively large amounts. The daily intake of protein from the employment of this formula is 15.54 grams, an amount calculated to be sufficient to replace depleted tissues and to provide for new growth. There is present in the mixture 4.32 grams of salts for replenishing inorganic elements.

The suggested modification furnishes nutrition in keeping with the character and amount of food elements best adapted to the particular demands of infants in an extreme state of emaciation and serves well as a starting point in attempting to meet the nutritive requirements of these undernourished babies.

Mellin's Food Co., 177 State Street Boston, Mass.

As a General Antiseptic

in place of

TINCTURE OF IODINE

Try

Mercurochrome - 220 Soluble

(Dibrom-oxymercuri-fluorescein)

2% Solution.

It stains, it penetrates, and it furnishes a deposit of the germicidal agent in the desired field.

It does not burn, irritate or injure tissue in any way.

Hynson, Westcott & Dunning

BALTIMORE, MD.

ERGOT FOR HYPODERMIC USE

Some of our most valuable drugs are dependent entirely upon the pharmaceutical manufacturer for their reliability. Take ergot as an example. It is not to be expected that all natural specimens will contain the same percentage of active principle, and experience has proved that they do not. The necessity of standardizing ergot preparations has long been apparent, but chemical methods were not available because of the complexity of the active principles. Once it was thought that ergotinic acid was the active principle, but now the less of this an ergot preparation contains the higher it is rated, other things being equal. The alkaloid ergotoxin is very important, but certain amounts of the amines, histamine and tyramine, must also be present.

Since, however, ergot has long been used in medicine for its effect upon the involuntary muscles, the idea occurred to Dr. Houghton, of Detroit, in 1895, that an ergot preparation might be tested by administering it to cocks and observing its effect upon the comb, the degree of bluing or blackening produced being taken as an indication of the physiologic action of the specimen. In 1898 this method was adopted by Parke, Davis & Co., as a standard method for assaying their commercial products of the drug. It is now generally recognized as the most practicable method of assay known.

It is sometimes desirable to administer ergot hypodermically, but the ordinary fluid extracts are not suitable for this purpose. To give a small dose double efficiency, a preparation is now available called Ergot Aseptic, each cubic centimeter of which is equivalent to two cubic centimeters of the official fluid extract. Further particulars are given in the Parke, Davis & Co. advertisement elsewhere in this issue.

All Legally Qualified Physicians are invited to attend the Physio-Electro Therapy Courses of

DR. C. M. SAMPSON

to be held in Omaha, Nebr., Oct 19th to 24th inclusive

Three Days of Demonstrations

Six hours each day by Dr. Sampson who will give you his vast research work and clinical experience while in charge of the largest clinics in the reconstruction period of the army and public health service.

Three Days of Scientific Work

Consisting of Lectures on Electrotherapy, Electrocoagulation, Actiniotherapy, Mecanotherapy, Hydrotherapy.

An Unusually Large Attendance

Is anticipated because of the great attention this work is attracting. Dr. Sampson is nationally and favorably known throughout the Ethical Medical Profession.

There will be sufficient apparatus of different makes for demonstrations.

Plan now to attend this fall course. Dr. Sampson has requested the Western X-Ray to accept bona fide registrations for his class to be held in a large well-prepared lecture room at 322 So. 19th St., Omaha, Neb.

----------------CUT HERE----------------

The Western X-Ray Co.
320 So. 19th St.
OMAHA, NEBR.

Price $50.00

Date______________________

Gentlemen: Please enroll me for Dr. Sampson course to be held in Omaha, Oct. 19 to 24 inclusive. I herewith enclose $10.00 to apply on the course and the balance I will pay $40.00 at the first lecture.

Name ______________________

City______________ State______________

CLECO CLECO
COTTON
42c a pound
500 Wood Tongue Blades
in a box $1.05 a box

THE W. G. CLEVELAND CO.
M. H. Cowell, Pres.
Surgical Supplies and Drugs
1410 Harney Street
Omaha, Nebraska

Distilled Water Ampoules
20cc
$2.70 per doz.
CLECO CLECO

ULCERS

Claassen states, in Cincinnati Journal of Medicine (May, 1925), ulcers due to tuberculosis are usually superficial with soft, bluish, irregular undermined edges, whose base in covered with watery, edematous granulations.

While we aim at anatomic perfection in the treatment of fractures, abundant evidence is before us, that good functional results may be expected even if there be considerable separation of the fragments. Those of us who may have been compelled to complete the dressing of a fracture which did not look first rate in the skiagraph, may take encouragement from the many cases which come before our observation where the results are entirely satisfactory, if we can only have the cooperation of the patient, which is not always easy and is often the greatest difficulty in restoring the function of a part.—J. M. Dodd (Jour. Iowa State Med. Soc.)

Frances Hodgson Burnett speaks of a young lady "so diaphanous the texture of her mentality, she was known as feather."

8100
Independence
Road

Office
937 Rialto
Building

Home of The
G. WILSE ROBINSON SANITARIUM COMPANY
KANSAS CITY, MISSOURI
Dr. G. Wilse Robinson, Superintendent and Neuro-Psychiatrist
Dr. B. Landis Elliott, Resident Neuro-Psychiatrist
NERVOUS AND MENTAL DISEASES
ALCOHOLICS AND DRUG ADDICTS
(will be received)

The Sanitarium is located on a tract of twenty-five beautiful acres, in Kansas City, Missouri.
The Buildings are commodious and of very attractive architecture.
Rooms with private bath can be provided.
The treatment embraces all of those therapeutic agents which Medical Science has determined to be most beneficial in the restoration of such patients as are received.
Recreation and entertainment are important factors in the rehabilitation of nervous and mental cases.
An indoor gymnasium, short golf course, tennis courts, croquet grounds, etc., will be available for the use of the patients.
The Sanitarium is twenty minutes drive from the Union Station and can be reached by automobile or the Kansas City-Independence Electric line from the Union Station or Sheffield Station, Kansas City, Missouri, or Independence, Missouri.
For further information communicate with the Superintendent—at office or sanitarium.

The University of Nebraska

COLLEGE OF MEDICINE

OFFERS

Splendid Opportunities for Medical Education

Medical Campus, University of Nebraska College of Medicine, Omaha, showing University Hospital, North and South Laboratory Buildings, Conkling Hall (Nurses' Home).

The University Hospital contains 130 beds entirely devoted to teaching. The Out-Patient Service, located in the South Laboratory Building, is under adequate supervision and is fully equipped. The University Hospital receives over 2600 cases annually and the Out-Patient Service over 25,000 visits annually.

Classes in the Medical College are limited in enrollment to those students showing a specific aptitude for the study of Medicine and who maintain a high standard of scholarship. Equipment and laboratory space permit the acceptance of only 96 freshmen students. Applicants will be accepted for registration on the basis of recommendations plus a high standard of scholarship as shown by premedical college and high school credentials submitted.

For Information Address, The Dean

University of Nebraska College of Medicine

Forty-Second and Dewey Avenue **OMAHA, NEBRASKA**

Abdominal Supporters and Binders
BOLEN
Elastic Hosiery, Laced Linen Mesh
Stockings, etc.
PATENTED

Maternity Binder

Supporters for every purpose, Enteroptosis, Nephroptosis, Obesity, Post-Operative, Hernia, Pregnancy, Sacro-Iliac, etc.

Special Attention Given to High Operations

Everything made to your order and orders filled within 48 hours after they reach our office. WRITE FOR DESCRIPTIVE LITERATURE

BOLEN MANUFACTURING COMPANY
1712 Dodge Street Omaha, Nebraska

Dr. Michael G. Wohl's Laboratory of Clinical Pathology

517-18 CITY NAT'L BK. BLDG.,
Omaha, Nebr.

MERCY HOSPITAL
Council Bluffs, Ia.

Chemical, Microscopical, Bacteriological and Metabolic Determinations.

SAVE MONEY ON YOUR X-RAY SUPPLIES

Get Our Price List and Discounts Before You Purchase

WE MAY SAVE YOU FROM 10% TO 25% ON X-RAY LABORATORY COST

Among the Many Articles Sold Are

X-RAY FILM, Duplitized or Dental, Eastman, Super-speed or Agfa Film. Heavy discounts on standard package lots. X-Ograph, Eastman, Justrite and Rubber Rim Dental Film, fast or slow emulsion.

BRADY'S POTTER BUCKY DIAPHRAGM insures finest radiographs on heavy parts, such as kidney, spine, gallbladder or heads.
Curved Top Style—up to 17x17 size cassettes $250.00
Flat Top Style—holds up to 11x14 cassettes $175.00

DEVELOPING TANKS, 4, 5 or 6 compartment stone, will end your dark room troubles. Ship from Chicago, Brooklyn, Boston or Virginia. Many sizes of enameled steel tanks.

INTENSIFYING SCREENS—Patterson, T. E., or Buck X-Ograph Screens for fast exposure alone or mounted in Cassettes. Liberal discounts. All-metal cassettes. Several makes.

If you have a machine have us put your name on our mailing list.

GEO. W. BRADY & CO.
784 So. Western Ave., Chicago

GENERAL PRACTITIONERS FIRST

When you consider the men of the past who have advanced our knowledge of the various specialties, you will find that most of them were general practitioners of medicine and undertook the intensive study of some specialty, only after a prolonged experience in the treatment of the sick. This valuable knowledge as being of the very fabric of their minds they daily employed when practicing in their limited field of work—Dr. John W. Keefe (Bost. Med. & Surg. Jour.)

Joshaway Crabapple says:

A good way to make it rain is to have a car washed and polished before starting on a trip.

'TIS THE SET OF A SOUL

One ship sails east and another sails west,
With the very same winds that blow;
'Tis the set of the sails, and not the gales,
That tells them the way to go.
Like the winds of the sea are the ways of fate,
As we voyage along through life.
'Tis the set of a soul that decides its goal,
And not the calm or the strife.

—Exchange.

POSSIBILITIES

We cannot all be handsome and we cannot all be great,
We cannot all have riches, nor all help to run the state;
We cannot all go fishing when the fish would like to bite,
But there's not a man among us who can't now and then do right.

We cannot all be princes and we cannot all be kings;
We cannot all make money merely doing easy things;
We cannot all seek pleasure or put heavy tasks aside,
But there's not a man among us who cannot be "true and tried".

We cannot all be youthful and we cannot all be gay,
We cannot all have topknots or avoid becoming gray;
But because the cost of living has become so very high
We can keep from overeating if we have the wish to try.

Trademark Registered **STORM** Trademark Registered

Binder and Abdominal Supporter
(PATENTED)

Trade Mark Reg.

Trade Mark Reg.

For Men, Women and Children

For Ptosis, Hernia, Pregnancy, Obesity, Relaxed Sacro-Iliac Articulations, Floating Kidney, High and Low Operations, etc.

Ask for 36-page Illustrated Folder.
Mail orders filled at Philadelphia only—within 24 hours.

Katherine L. Storm, M. D.
Originator, Patentee, Owner and Maker
1701 Diamond Street Philadelphia

SWEDISH MISSION HOSPITAL

Telephone Webster 0157

24th and Pratt Streets **Omaha, Nebraska**

Staff
H. P. Hamilton, M. D., F. A. C. S., Pres.
R. W. Bliss, M. D., F. A. C. P., Vice Pres.
Paul H. Ellis, M. D., Secretary

Surgical Staff
H. P. Hamilton, M. D., F. A. C. S.
E. W. Powell, M. D.
R. Rix, M. D.
Alf. J. Brown, M. D., F. A. C. S.
C. H. Waters, M. D., F. A. C. S.
Max Emmert, M. D., F. A. C. S.

Oculists and Aurists
Chas. S. James, M. D., F. A. C. S.
W. P. Wherry, M. D., F. A. C. S.
W. P. Haney, M. D., F. A. C. S.
J. Calvin Davis, M. D.

Oral Surgeon
Wm. L. Shearer, M. D., F. A. C. S.

Internes
J. H. McMillin
C. H. Folsom

Gynecologist
Palmer Findley, M. D., F. A. C. S.

Medical Staff
R. W. Bliss, M. D., F. A. C. P.
Paul H. Ellis, M. D.
Warren Thompson, M. D.
George P. Pratt, M. D., F. A. C. P.

General Staff
E. J. Griffin, M. D.
George W. Prichard, M. D.
Glenn D. Whitcomb, M. D.

Pediatrician
Clyde Moore, M. D.

Obstetrician
J. F. Hyde, M. D.

Roentgenologist
Chas. H. Ballard, M. D.

Pathologist
E. T. Manning, M. D.

For particulars, write to the Hospital.

Omaha
Maternity
Hospital

No. 2204 St. Mary's Avenue
OMAHA - NEBRASKA

Telephone AT6345 *REGISTERED NURSES*

10th Year of Experience
Strictly Modern Service
Rates Reasonable

Private HOSPITAL and Maternity Home
2954 Apple Street
LINCOLN, NEBRASKA

Phone B4104
MRS. H. T. ROEDER,
Superintendent

An Invitation to Physicians

Physicians in good standing are cordially invited to visit the Battle Creek Sanitarium and Hospital at any time for observation and study, or for rest and treatment.

Special clinics for visiting physicians are conducted in connection with the Hospital, Dispensary and various laboratories.

Physicians in good standing are always welcome as guests, and accommodations for those who desire to make a prolonged stay are furnished at a moderate rate. No charge is made to physicians for regular medical examination or treatment. Special rates for treatment and medical attention are also granted dependent members of the physician's family.

An illustrated booklet telling of the Origin, Purposes and Methods of the institution, a copy of the current "MEDICAL BULLETIN", and announcements of clinics, will be sent free upon request.

The Battle Creek Sanitarium
Room 101
BATTLE CREEK MICHIGAN

I. Surgery and Gynecology
Chief of Section
A. F. Jonas, M. D.
Associates—
C. C. Morrison, M. D.
C. R. Kennedy, M. D.
J. R. Nilsson, M. D.
Orthopedics
J. P. Lord, M. D.
Assistants in Surgery
Glenn Miller, M. D.
R. J. Stearns, M. D.
Assistant in Orthopedics
Robert D. Schrock, M. D.
II. Internal Medicine
Chief of Section,
W. O. Bridges. M. D.
Associates—
E. L. Bridges, M. D.
Rodney W. Bliss, M. D.
Asst., R. Allyn Moser, M. D.
III. Eye, Ear, Nose and Throat
Chief of Service,
Harold Gifford, M. D.
Associates—
J. M. Patton, M. D.
W. D. Callfss, M. D.
Asst., Sanford Gifford, M. D.

Address the Superintendent

Nebraska Methodist Episcopal Hospital
Corner Cuming and Thirty-sixth Sts. **Omaha, Neb.**

IV. Pediatrics
Chief of Service,
H. M. McClanahan, M. D.
Associates—
Clyde Moore, M. D.
H. B. Hamilton, M. D.
J. A. Henske, M. D.
V. Obstetrics
Chief Emeritus,
J. C. Moore, M. D.
Chief of Service,
W. H. Taylor, M. D.
Associate—
Earl C. Sage, M. D.
VI. Neuropsychiatry
Chief of Service,
G. A. Young, M. D.
Associate—
H. Wigton, M. D.
VII. Dermatology
Alfred Schalek, M. D.
VIII. Roentgenology
C. R. Kennedy, M. D.
IX. Pathology
W. B. Moody, M. D.

DOCHEZ SCARLET FEVER ANTITOXIN IN THIRTY-ONE CASES

R. H. Graham, Aurora, Ill. (Journal A. M. A., July 11, 1925), has observed thirty-one cases treated with unconcentrated scarlet fever serum by the Dochez method. In the thirty-one patients treated, twenty-one developed serum disease. These reactions ranged in severity from slight urticarial eruptions to a generalized edema, and the temperature as high as 105 F. Six of the cases showed anaphylaxis in the first hour. Eighteen cases either occurred or recurred from the second to the seventh day. Nine patients had an elevation of temperature from 100 to 105 F. Serum disease occurred in twenty-one cases out of a possible thirty-one. The size of the dose apparently did not influence the reaction. Immunization was established in twenty-four cases, all of those treated the day of exposure. Serum injected the second day after exposure did not protect two patients out of three. Therapeutic injections gave little apparent relief. One advanced case showed no improvement with 40 c.c. of unconcentrated serum, and there was a serious serum disease.

Trademark Registered **STORM** Trademark Registered

Binder and Abdominal Supporter
(PATENTED)

Trade Mark Reg.   Trade Mark Reg.

For Men, Women and Children

For Ptosis, Hernia, Pregnancy, Obesity, Relaxed Sacro-Iliac Articulations, Floating Kidney, High and Low Operations, etc.

Ask for 36-page Illustrated Folder.
Mail orders filled at Philadelphia only—
within 24 hours.

Katherine L. Storm, M. D.
Originator, Patentee, Owner and Maker
1701 Diamond Street Philadelphia

SWEDISH MISSION HOSPITAL

Telephone Webster 0157

Staff
H. P. Hamilton, M. D., F. A. C. S., Pres.
R. W. Bliss, M. D., F. A. C. P., Vice Pres.
Paul H. Ellis, M. D., Secretary

Surgical Staff
H. P. Hamilton, M. D., F. A. C. S.
E. W. Powell, M. D.
R. Rix, M. D.
Alf. J. Brown, M. D., F. A. C. S.
C. H. Waters, M. D., F. A. C. S.
Max Emmert, M. D., F. A. C. S.

Oculists and Aurists
Chas. S. James, M. D., F. A. C. S.
W. P. Wherry, M. D., F. A. C. S.
W. P. Haney, M. D., F. A. C. S.
J. Calvin Davis, M. D.

Oral Surgeon
Wm. L. Shearer, M. D., F. A. C. S.

Internes
J. H. McMillin
C. H. Folsom

24th and Pratt Streets **Omaha, Nebraska**

Gynecologist
Palmer Findley, M. D., F. A. C. S.

Medical Staff
R. W. Bliss, M. D., F. A. C. P.
Paul H. Ellis, M. D.
Warren Thompson, M. D.
George P. Pratt, M. D., F. A. C. P.

General Staff
E. J. Griffin, M. D.
George W. Prichard, M. D.
Glenn D. Whitcomb, M. D.

Pediatrician
Clyde Moore, M. D.

Obstetrician
J. F. Hyde, M. D.

Roentgenologist
Chas. H. Ballard, M. D.

Pathologist
E. T. Manning, M. D.

For particulars, write to the Hospital.

Omaha
Maternity
Hospital

No. 2204 St. Mary's Avenue
OMAHA - NEBRASKA

Telephone AT6345 *REGISTERED NURSES*

10th Year of Experience
Strictly Modern Service.
Rates Reasonable

Private HOSPITAL and Maternity Home
2954 Apple Street
LINCOLN, NEBRASKA

Phone B4104
MRS. H. T. ROEDER,
Superintendent

An Invitation to Physicians

Physicians in good standing are cordially invited to visit the Battle Creek Sanitarium and Hospital at any time for observation and study, or for rest and treatment.

Special clinics for visiting physicians are conducted in connection with the Hospital, Dispensary and various laboratories.

Physicians in good standing are always welcome as guests, and accommodations for those who desire to make a prolonged stay are furnished at a moderate rate. No charge is made to physicians for regular medical examination or treatment. Special rates for treatment and medical attention are also granted dependent members of the physician's family.

An illustrated booklet telling of the Origin, Purposes and Methods of the institution, a copy of the current "MEDICAL BULLETIN", and announcements of clinics, will be sent free upon request.

The Battle Creek Sanitarium
Room 101
BATTLE CREEK MICHIGAN

I. Surgery and Gynecology
Chief of Section
A. F. Jonas, M. D.
Associates—
C. C. Morrison, M. D.
C. R. Kennedy, M. D.
J. R. Nilsson, M. D.
Orthopedics
J. P. Lord, M. D.
Assistants in Surgery
Glenn Miller, M. D.
R. J. Stearns, M. D.
Assistant in Orthopedics
Robert D. Schrock, M. D.
II. Internal Medicine
Chief of Section,
W. O. Bridges, M. D.
Associates—
E. L. Bridges, M. D.
Rodney W. Bliss, M. D.
Asst., R. Allyn Moser, M. D.
III. Eye, Ear, Nose and Throat
Chief of Service,
Harold Gifford, M. D.
Associates—
J. M. Patton, M. D.
W. D. Callfas, M. D.
Asst., Sanford Gifford, M. D.

IV. Pediatrics
Chief of Service,
H. M. McClanahan, M. D.
Associates—
Clyde Moore, M. D.
H. B. Hamilton, M. D.
J. A. Henske, M. D.
V. Obstetrics
Chief Emeritus,
J. C. Moore, M. D.
Chief of Service,
W. H. Taylor, M. D.
Associate—
Earl C. Sage, M. D.
VI. Neuropsychiatry
Chief of Service,
G. A. Young, M. D.
Associate—
H. Wigton, M. D.
VII. Dermatology
Alfred Schalek, M. D.
VIII. Roentgenology
C. R. Kennedy, M. D.
IX. Pathology
W. B. Moody, M. D.

Address the Superintendent

Nebraska Methodist Episcopal Hospital
Corner Cuming and Thirty-sixth Sts. **Omaha, Neb.**

Classified Advertisements

A Practical Course in Standardized Physiotherapy, under auspices of Biophysical Research Dept. of Victor X-Ray Corporation, is now available to physicians. Offers a highly practical knowledge of all the fundamental principles that go to make up the standards of modern scientific physiotherapeutic work. Course requires one week's time. For further information apply to J. F. Wainwright, Registrar, 236 So. Robey St., Chicago, Ill.

SITUATIONS WANTED

WANTED: Salaried Appointments for Class A Physicians in all branches of the Medical Profession. Let us put you in touch with the best man for your opening. Our nation-wide connections enable us to give superior service. Aznoe's National Physicians' Exchange, 30 North Michigan, Chicago. Established 1896. Member The Chicago Association of Commerce.

For Rent: Light, large office with use of reception room and attendant's services to ethical physician or dentist. For information apply to Dr. Alfred Schalek, 520 Brandeis Theater Building.

WANTED: Young physician as assistant in firm; opportunity for partnership later; prefer unmarried recent graduate only; internship not necessary. Drs. Breuer, 201 Security Mutual Bldg., Lincoln, Nebr.

For Sale

For Sale: Practice established ten years; county seat town; good farming community; main line Union Pacific. Business 1924, $6,000. No hospital or surgeon nearer than fifty miles; fine location for hospital and surgery. Practice, office furniture and some equipment, $500. Reason for leaving, specializing and health of family. Purchase of residence optional. Address, Nebraska State Medical Journal, Lincoln, Neb.

FOR SALE—Central South Dakota. General practice averaging $6,500 ten years, with or without modern office building. County seat, modern town, 1200 people, main line railroad. Appointments transferable. Protestant, not over 35, desired. Must be clean and capable. References exchanged. Thorough introduction. Price upon application. Address Nebraska State Medical Assn., McKinley Bldg., Lincoln, Nebr.

LOSS OF HAIR AFTER FEBRILE DISEASES

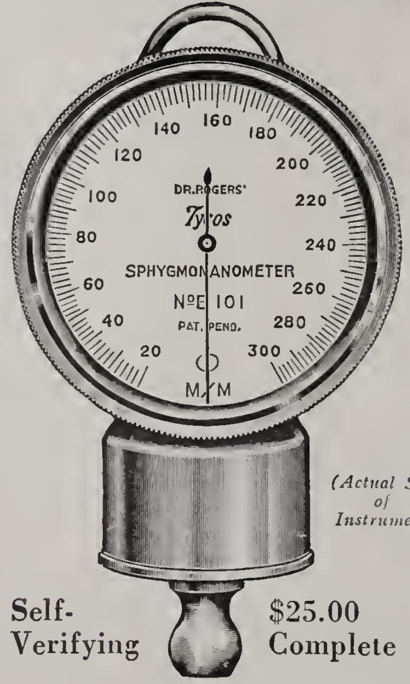
Sobouraud advises rubbing the skin of the head with a toothbrush dipped in the following solution: Rp. Spirit Lavandulae 20.0, acetoni 30.0, aqu. dest. 30, pot, nitr. 0.5, alcohol (90%) add 300 cc. Men should apply it for 4 minutes, women for 10. (Bullet. gener. de therapeut. No. 2, 1925).

Tycos

FEVER THERMOMETERS

Real merit is found in these Fever Thermometers. Every one bears the name *Tycos*—the mark that tells you you are purchasing a certified thermometer. Insist on *Tycos*. Carried by all leading druggists.

***Tycos* Sphygmomanometer**



(Actual Size of Instrument)

Self-Verifying

$25.00 Complete

WRITE for Blood Pressure Manual and Bulletin No. 4 on the Analysis of Urine. These books cover their subjects thoroughly, and should be in every physician's library. Sent gratis.

Taylor Instrument Companies

ROCHESTER, N. Y., U. S. A.

Canadian Plant, Tycos Building, Toronto

Manufacturing Distributors in Great Britain, Short & Mason, Ltd., London

THERE IS A TYCOS OR TAYLOR TEMPERATURE INSTRUMENT FOR EVERY PURPOSE

ST. ELIZABETH'S HOSPITAL

Management: Sisters of St. Francis

11 & South Streets
LINCOLN, NEBRASKA

Departments of Medicine, Surgery, Obstetrics, Pediatrics, Orthopedics and Neurology

A Training School for Nurses is maintained in connection with the hospital

GLAND THERAPY

Some medicaments can be assayed, and thus standardized, by chemical means — such as belladonna, cinchona, hydrastis, nux vomica, etc.; others by physiological methods, as ergot, digitalis, aconite, convallaria, etc.; but now that gland products are coming into such extensive use, how is the physician to be assured of their activity?

Some of them, it is true are tested by chemical or physiological means, for example desicated thyroid, adrenalin, and pituitrin; but for the majority there is no assurance beyond the care of the manufacturer in handling the fresh glands and applying suitable methods of desiccation or extraction. The hormones must be preserved; otherwise the gland product is simply so much protein. Here, if anywhere, the reputation of the manufacturer is a matter of prime importance. Physicians who are particularly interested in gland therapy should read what Parke, Davis & Co., have to say, in their advertisement in this issue about their methods of manufacture.

SAVE MONEY ON YOUR X-RAY SUPPLIES

Get Our Price List and Discounts Before You Purchase

WE MAY SAVE YOU FROM 10% TO 25% ON X-RAY LABORATORY COST

Among the Many Articles Sold Are

X-RAY FILM, Duplitized or Dental, Eastman, Super-speed or Agfa Film. Heavy discounts on standard package lots. X-Ograph, Eastman, Justrite and Rubber Rim Dental Film, fast or slow emulsion.

BRADY'S POTTER BUCKY DIAPHRAGM insures finest radiographs on heavy parts, such as kidney, spine, gallbladder or heads.
Curved Top Style—up to 17x17 size cassettes $250.00
Flat Top Style—holds up to 11x14 cassettes $175.00

DEVELOPING TANKS, 4, 5 or 6 compartment stone, will end your dark room troubles. Ship from Chicago, Brooklyn, Boston or Virginia. Many sizes of enameled steel tanks.

INTENSIFYING SCREENS—Patterson, T. E., or Buck X-Ograph Screens for fast exposure alone or mounted in Cassettes. Liberal discounts. All-metal cassettes. Several makes.

If you have a machine have us put your name on our mailing list.

GEO. W. BRADY & CO.
784 So. Western Ave., Chicago

All Legally Qualified Physicians are invited to attend the Physio-Electro Therapy Courses of

DR. C. M. SAMPSON

to be held in Omaha, Nebr., Nov. 9th to 14th inclusive

Three Days of Demonstrations

Six hours each day by Dr. Sampson who will give you his vast research work and clinical experience while in charge of the largest clinics in the reconstruction period of the army and public health service.

Three Days of Scientific Work

Consisting of Lectures on Electrotherapy, Electrocoagulation, Actiniotherapy, Mecanotherapy, Hydrotherapy.

An Unusually Large Attendance

Is anticipated because of the great attention this work is attracting. Dr. Sampson is nationally and favorably known throughout the Ethical Medical Profession.

There will be sufficient apparatus of different makes for demonstrations.

Plan now to attend this fall course. Dr. Sampson has requested the Western X-Ray to accept bona fide registrations for his class to be held in a large well-prepared lecture room at 322 So. 19th St., Omaha, Neb.

------------------------------CUT HERE------------------------------

The Western X-Ray Co.
320 So. 19th St.
OMAHA, NEBR.

Price $50.00

Date________________________________

Gentlemen: Please enroll me for Dr. Sampson course to be held in Omaha, Nov. 9-14 inclusive. I herewith enclose $10.00 to apply on the course and the balance I will pay $40.00 at the first lecture.

Name ____

City________________________ State________________

The Radium Hospital of Omaha

For the treatment of Cancer, Tumor and precancerous conditions. Fifty rooms devoted entirely to Radium Treatment.

Complete X-ray Equipment

D. T. QUIGLEY, M. D.
Director

34th and Farnam Streets. **Omaha, Neb.**

TEST YOUR QUALIFICATIONS

Are we not all more or less weak when it comes to self-examination? It is not so easy to see faults in others. Very few take time to search for frailities in themselves.

Here is a list of questions for self-examination asked by the editor of Efficiency Magazine, London, England. Ask yourself these questions and try to answer them frankly:

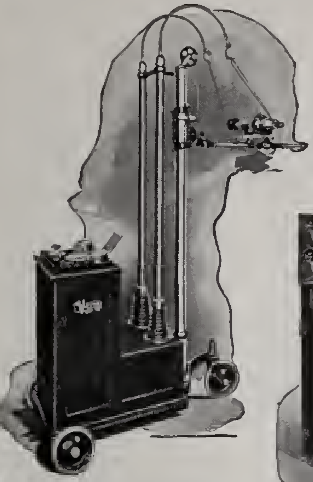
1. Can you express your own ideas without causing others to feel that you are overbearing and narrow minded?
2. Do you control your temper and not "fly off the handle" when things go wrong?
3. Are you usually cheerful without "grouchy" spells?
4. Do you think for yourself and not let the opinions of others unduly influence you?
5. Do you give credit where credit is due?
6. Are you calm when your own mistakes are pointed out?
7. Do your men respect you and cooperate with you?
8. Can you maintain discipline without often resorting to the use of authority?
9. When thrown with a group of strangers do you adjust yourself easily?
10. Can you adjust a difficulty and retain the friendship of the person with whom you have differed?
11. When talking to superiors do you feel free from embarrassement?
12. When interviewing subordinates do you put them at ease?
13. Can you meet opposition without becoming confused and saying things you wish afterward you had not said?
14. Are you sought out by your friends to handle delicate situations because of your ability to do such things?
15. Are you patient when dealing with people who are hard to please?
16. Do you make and retain friends easily?

Not all of these qualifications are necessary, perhaps, for success in every walk of life. If you can pass 100 per cent, success is "jingling" your door bell.

WEALTH AND HEALTH

"Brown's plan is a poor one to follow," said the doctor to a patient who thought he didn't need any recreation. "You see, Brown completely lost his health try to get wealthy. Then he lost all his wealth trying to get healthy."

Two-Section Mobile Diathermy Apparatus



Stabilized Mobile X-ray Unit—an ideal physician's outfit

"Snook-Special" Combination Diagnostic and Deep Therapy Apparatus for the specialized X-ray laboratory

Quartz Lamp for Ultra-Violet Therapy

Wantz Multiple Wave Generator for Sinusoidal and Galvanic Therapy

A Point of View

"Of all human ambitions an open mind eagerly expectant of new discoveries and ready to remold convictions in the light of added knowledge and dispelled ignorances and misapprehensions, is the noblest and the most difficult to achieve."

—James Harvey Robinson in "The Humanizing of Knowledge"

The Victor X-Ray Corporation owes its leadership in the manufacture of X-ray and physiotherapeutic apparatus to a point of view.

This point of view recognizes the fact that roentgenology and physiotherapeutics are ever evolving new methods which must be reckoned with both by the physician and by the manufacturer of medical apparatus. But what new methods are sufficiently advanced for acceptance in practice the medical profession alone is competent to decide.

Hence, while the Victor X-Ray Corporation keeps abreast of the progress made by medical research it introduces only such apparatus as open-minded physicians are convinced they need.

Thus both medical progress and medical conservatism dictate the character of the roentgenological and physiotherapeutic apparatus developed by the Victor X-Ray Corporation.

Let us advise with you in the selection of X-ray equipment that best meets your individual requirements. If there is some phase of physiotherapy on which you would like authoritative reprinted articles, we have them. You don't obligate yourself to buy when writing us for suggestions or literature. Use the coupon below.

VICTOR X-RAY CORPORATION

Main Office and Factory: 2012 Jackson Blvd., Chicago

33 Direct Branches—*Not Agencies*—Throughout U. S. and Canada

VICTOR X-RAY CORPORATION, Chicago
Please send me information on X-ray apparatus for
____
(State range of service desired)
Descriptive Bulletins and Clinical Reprints on:
☐ Quartz Lamps ☐ Sinusoidal Apparatus
☐ Diathermy Apparatus ☐ Galvanic Apparatus
☐ Phototherapy Lamps

*Name*_______________________
*Address*_____________________
*City*_____________ *State*__________
(A-239-B)

RADIUM
RENTAL SERVICE
BY
THE PHYSICIANS RADIUM
ASSOCIATION of CHICAGO, Inc.

Incorporated under the laws of Illinois, not for profit, but for the purpose of making radium available to Physicians to be used in the treatment of their patients. Radium loaned to Physicians at moderate rental fees, or patients may be referred to us for treatment if preferred.

Careful consideration will be given inquiries concerning cases in which the use of Radium is indicated

THE PHYSICIANS RADIUM ASSOCIATION
1105 Tower Bldg., 6 N. Michigan Ave.
CHICAGO, ILL.

Telephones: Central 2268-2269.
Managing Director: Wm. L. Brown, M. D.

BOARD OF DIRECTORS
William L. Baum, M. D. Wm. L. Brown, M. D.
Frederick Menge, M. D. Walter S. Barnes, M. D.
Louis E. Schmidt, M. D.

CLINICAL AND SEROLOGIC STUDIES OF NEUROSYPHILIS WITH TRYPARSAMIDE THERAPY

In a series of thirty-seven cases of neurosyphilis in all of which antisyphilitic treatment had been given previously, tryparsamide therapy combined with special technic has proved in the hands of J. M. Wolfshon and Carlos Leiva, San Francisco (Journal A. M. A., Aug. 15, 1925), an apparently distinct advance over other forms of treatment. The improvements are mostly symptomatic. Tryparsamide in doses of 2.5 gm. may and does occasionally cause ocular symptoms, but no more often than do other arsenicals. It is one of the best tolerated of the arsenicals used in the treatment of neurosyphilis. It has little or no effect on the serologic reactions in general paralysis. It is distinctly beneficial, both clinically and serologically, in certain types of tabes. Tryparsamide is a distinct addition to the therapy of neurosyphilis.

Impetigo contagiosa due to streptococci yields to 3 per cent ammomated mercury, if due to staphylococcus the ointment is of no avail; however, 5 per cent gentian violet is effective.

The WILLOWS
MATERNITY
SANITARIUM

A superior seclusion maternity home and hospital for unfortunate young women. Patients accepted any time during gestation. Adoption of babies when arranged for. Prices reasonable.

Write for 90-page illustrated booklet.

The Willows
2929 Main St.
Kansas City, Mo.

CHILDREN

Some people without children seem to have complete lives, but they are only a few. In these days when we are so keenly interested in the future, in new forms of education, and in the actual instincts of the species, it seems as if children have more to add to our lives even than formerly. No parent who gets away with the job can be an egotist, a neurotic, narrow, vain or weak. No parent with any mind at all can help feeling close to the springs of life and in touch with the cradle of the race. The same extended reality may be obtained by teachers, or by others in helpful and steady contact with the young, but the person on whom the children make none of their confident demands, whom they never consult about the rules of life and the opening wonders of nature, is all too likely, as he grows old, to lose the youthfulness that stays with the fortunate to the end.—Hearst' International.

Druggist (to his fat wife): "Don't come to the store today. I have a special sale of my Famous Fat Reducer".

Trademark Registered **STORM** Trademark Registered

Binder and Abdominal Supporter
(PATENTED)

Trade Mark Reg. Trade Mark Reg.

For Men, Women and Children

For Ptosis, Hernia, Pregnancy, Obesity, Relaxed Sacro-Iliac Articulations, Floating Kidney, High and Low Operations, etc.

Ask for 36-page Illustrated Folder.
Mail orders filled at Philadelphia only—within 24 hours.

Katherine L. Storm, M. D.
Originator, Patentee, Owner and Maker
1701 Diamond Street Philadelphia

SWEDISH MISSION HOSPITAL

Telephone Webster 0157

Staff
H. P. Hamilton, M. D., F. A. C. S., Pres.
R. W. Bliss, M. D., F. A. C. P., Vice Pres.
Paul H. Ellis, M. D., Secretary

Surgical Staff
H. P. Hamilton, M. D., F. A. C. S.
E. W. Powell, M. D.
R. Rix, M. D.
Alf. J. Brown, M. D., F. A. C. S.
C. H. Waters, M. D., F. A. C. S.
Max Emmert, M. D., F. A. C. S.

Oculists and Aurists
Chas. S. James, M. D., F. A. C. S.
W. P. Wherry, M. D., F. A. C. S.
W. P. Haney, M. D., F. A. C. S.
J. Calvin Davis, M. D.

Oral Surgeon
Wm. L. Shearer, M. D., F. A. C. S.

Internes
J. H. McMillin
C. H. Folsom

24th and Pratt Streets **Omaha, Nebraska**

Gynecologist
Palmer Findley, M. D., F. A. C. S.

Medical Staff
R. W. Bliss, M. D., F. A. C. P.
Paul H. Ellis, M. D.
Warren Thompson, M. D.
George P. Pratt, M. D., F. A. C. P.

General Staff
E. J. Griffin, M. D.
George W. Prichard, M. D.
Glenn D. Whitcomb, M. D.

Pediatrician
Clyde Moore, M. D.

Obstetrician
J. F. Hyde, M. D.

Roentgenologist
Chas. H. Ballard, M. D.

Pathologist
E. T. Manning, M. D.

For particulars, write to the Hospital.

Omaha Maternity Hospital

No. 2204 St. Mary's Avenue
OMAHA - NEBRASKA

Telephone AT6345 *REGISTERED NURSES*

10th Year of Experience
Strictly Modern Service.
Rates Reasonable

Private HOSPITAL and Maternity Home

2954 Apple Street
LINCOLN, NEBRASKA

Phone B4104

MRS. H. T. ROEDER,
Superintendent

SOUTH CAROLINA HAS EFFECTIVE SYSTEM OF DISEASE REPORTING

Dr. James A. Hayne, State Health Officer of South Carolina and Collaborating Epidemiologist of the United States Public Health Service, has instituted a new and decidedly more effective system of disease reporting by physicians. Each week a card is mailed to physicians for the report of the number of cases of diphtheria, gonorrhea, syphilis, malaria, smallpox, tuberculosis, and certain other diseases. The greater effectiveness of this system of reporting is shown by the fact that in the first month of its operation 734 cases of syphilis were reported as against an average of 245 cases for each of the preceding ten months, or three times as many cases as were reported formerly. There is a still higher rate of increase in the number of reported cases of gonorrhea. Over seven times as many cases of this disease were reported under the new system as were reported formerly.

CHEERFUL COMPLIMENT

Senior: "I'be got a terrible cold in my head."

Professor: "Don't complain, but be glad. Even if it's only a cold. it's something."

8100
Independence
Road

Office
937 Rialto
Building

Home of The

G. WILSE ROBINSON SANITARIUM COMPANY
KANSAS CITY, MISSOURI

Dr. G. Wilse Robinson, Superintendent and Neuro-Psychiatrist
Dr. B. Landis Elliott, Resident Neuro-Psychiatrist

NERVOUS AND MENTAL DISEASES

ALCOHOLICS AND DRUG ADDICTS
(will be received)

The Sanitarium is located on a tract of twenty-five beautiful acres, in Kansas City, Missouri.

The Buildings are commodious and of very attractive architecture.

Rooms with private bath can be provided.

The treatment embraces all of those therapeutic agents which Medical Science has determined to be most beneficial in the restoration of such patients as are received.

Recreation and entertainment are important factors in the rehabilitation of nervous and mental cases.

An indoor gymnasium, short golf course, tennis courts, croquet grounds, etc., will be available for the use of the patients.

The Sanitarium is twenty minutes drive from the Union Station and can be reached by automobile or the Kansas City-Independence Electric line from the Union Station or Sheffield Station, Kansas City, Missouri, or Independence, Missouri.

For further information communicate with the Superintendent—at office or sanitarium.

THE NEBRASKA STATE MEDICAL JO[illegible]NAL

Philadelphia, Pa.
College of Physicians
22nd & Chestnut

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICA[illegible]IATION

Vol. X. Norfolk, Nebraska, January, 1925 No. 1

CALCREOSE

CALCIUM AND TUBERCULOSIS

Samples of Tablets on Request

CALCIUM starvation has been suggested by phthisiologists as a factor in the etiology of pulmonary tuberculosis. By prescribing CALCREOSE some of the needed calcium may be supplied.

CALCREOSE (calcium creosotate) is a mixture containing in loose chemical combination approximately equal weights of creosote and lime. It has the pharmacologic activity of creosote as used in the adjuvant treatment of tuberculosis, but differs from creosote in that it apparently does not have any untoward effect on the stomach.

POWDER — TABLETS — SOLUTION

THE MALTBIE CHEMICAL COMPANY
NEWARK, NEW JERSEY

COLLEGE OF PHYSICIANS
LIBRARY
JAN 9 1925
OF PHILADELPHIA

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

The Gilchrist Chlorine Ejector

Sold only to reputable physicians or on their order

Announcing Improved Types

SINCE placing the original Gilchrist Chlorine Ejector on the market we have, through our dealing with a great many physicians, learned their requirements, and experience has taught us what is demanded in the use of chlorine gas for use as a therapeutic agent. These are outlined as follows:

First—An absolutely safe and trouble proof apparatus.

Second—Simplicity of adjustment and use.

Third—An apparatus that permits of treating several patients in a chamber or home and also another type with which an individual treatment can be given—both to be portable.

Fourth—Economy of use.

Fifth—Low cost and long life.

1. The personnel of the National Research Laboratories has had long experience with chlorine gas, and while the dangers connected therewith have been greatly magnified there can be unpleasant circumstances connected with its application that are guarded against in the Gilchrist Chlorine Ejector. *It is not necessary to have a cylinder of gas in the presence of the patient.*

2. We have stripped the apparatus of all unnecessary appurtenances, insuring a minimum of effort in its use and the least possible adjustment.

3. The physician will be called upon to use one type for treatment in a chamber or home when the individual type would not be suitable, for instance in treating very small children. *Many physicians due to lack of space cannot have a chamber connected with their offices.* Therefore we have developed and placed on the market the Individual Type.

4. There are features connected with either type that permit of its use any where, and the greater quantity of pure chlorine gas in our cylinders insures a very low upkeep cost to the physician.

5. *The initial cost of the Gilchrist Chlorine Ejector is positively the lowest obtainable.* Simplicity of construction means low manufacturing cost. Still there has been no skimping that would detract from its efficiency, safety or appearance.

The Gilchrist method of chlorine treatment and the Gilchrist Chlorine Ejector were devised by Lt. Col. Harry L. Gilchrist of the Medical Corps of the U. S. Army.

INFANT DIET MEAD'S MATERIALS

INFANT FEEDING

THE PHYSICIAN HIMSELF is the most important factor in the successful feeding of infants.

BUT TWO OTHER FACTORS ENTER into the equation—

THE MOST IMPORTANT BEING the physician's control of the case;

AND NEXT IN IMPORTANCE the reliability of his infant diet materials.

MEAD'S INFANT DIET MATERIALS satisfy this last requirement. They are as reliable as it is possible for us to make them;

BUT THEIR INDIRECT INFLUENCE on the other requirement, the doctor's control over the feeding case, is even of greater value.

MEAD'S INFANT DIET MATERIALS are marketed to the laity only on the physician's prescription—No feeding directions accompany trade packages—The mother gets her information only from the doctor who changes the feedings from time to time to meet the nutritional requirements of the growing baby. *He therefore CONTROLS the case.*

THE PHYSICIAN can, with three MEAD diet materials, plus his skill and his control, satisfy the nutritional requirements of nearly all infants entrusted to his care.

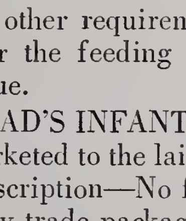
MEAD'S DEXTRI-MALTOSE (carbohydrate) cow's milk and water, combined in proportions to suit the individual baby, meets successfully the requirements of most infants.

FOR OTHER INFANTS where additional carbohydrate is not indicated but additional protein is indicated (such as in Diarrhoea, Marasmus, Colic in breast-fed infants, etc.), the use of CASEC (protein) in the cow's milk modification gives gratifying results.

MEAD'S COD LIVER OIL, a standardized antirachitic agent of known potency, protects all infants, whether breast or bottle fed, from Rickets and can be given in such small doses as not to upset the fat proportion of the baby's diet.

Samples and literature describing these three diet materials

MEAD'S DEXTRI-MALTOSE · MEAD'S STANDARDIZED COD LIVER OIL
MEAD'S CASEC *Sent at the physician's request*



MEAD JOHNSON & COMPANY
MAKERS OF INFANT DIET MATERIALS
EVANSVILLE, INDIANA, U. S. A.

MEAD'S DEXTRI-MALTOSE

SOOTHING to the SIGHT

Filtering the light sensibly eliminates possible harmful rays without disturbing color values.

Modifying excessive illumination evenly reduces annoying glares, giving relief and adds comfort.

SOFT-LITE Lenses in Light and Dark Shades are ideal wherever tinted or colored lenses are needed.

Available in single vision torics, in Punktals, Ultex, Kryptoks and Cross Trifocals. !

Ground in all forms by Bausch & Lomb, excepting Ultex, made by Onepiece Bifocal Lens Co. !

Write for Literature and Samples ÷ Stocks at All Our Houses

Distributors

RIGGS OPTICAL COMPANY

Exclusively Wholesale

Three Houses in Nebraska

OMAHA **LINCOLN** **HASTINGS**

Sioux City

Madison, Wis.
Quincy
Salt Lake City
Cedar Rapids
Council Bluffs
Iowa City
Mankato
Fargo
Kansas City
Denver
Green Bay
Reno, Nev.
Oklahoma City
Wichita
Sioux Falls
Pocatello
Pittsburg, Kas.
Santa Ana
San Francisco
Ogden
Portland
Pueblo
Appleton
St. Paul
Boise
Los Angeles
Spokane
Waterloo
Great Falls
Oakland, Cal.
Seattle
Tacoma
Butte
Salina
Fort Dodge

Philadelphia, Pa.
College of Physicians
22nd & Chestnut

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, February, 1925 No. 2

CALCREOSE

CALCIUM AND TUBERCULOSIS

Samples of Tablets on Request

CALCIUM starvation has been suggested by phthisiologists as a factor in the etiology of pulmonary tuberculosis. By prescribing **CALCREOSE** some of the needed calcium may be supplied.

CALCREOSE (calcium creosotate) is a mixture containing in loose chemical combination approximately equal weights of creosote and lime. It has the pharmacologic activity of creosote as used in the adjuvant treatment of tuberculosis, but differs from creosote in that it apparently does not have any untoward effect on the stomach.

POWDER — TABLETS — SOLUTION

THE MALTBIE CHEMICAL COMPANY
NEWARK, NEW JERSEY

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

COLLEGE OF PHYSICIANS
LIBRARY
FEB 10 192

Squibb's Liquid Petrolatum with Agar
E.R. Squibb & Sons New York

A NEW SQUIBB PRODUCT

TO supply a need of the medical profession, the Squibb Laboratories announce the perfection of a distinctive and superior agar-oil emulsion. It will be marketed under the professional title

Squibb's Liquid Petrolatum with Agar

This new Squibb preparation is made with Squibb's Liquid Petrolatum (Heavy, Californian), known for over twelve years as a pure naphthene oil of exceptionally high natural viscosity.

➔ Squibb's Liquid Petrolatum with Agar has a dry agar-agar content three times as great as that of similar preparations on the market.

It is absolutely free from oily taste, and its creamy consistency, pleasant taste and proven therapeutic efficacy, assure its universal favor with patients as well as physicians.

E·R·SQUIBB & SONS, NEW YORK
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858.

INFANT DIET MEAD'S MATERIALS

The *Real* Value of
MEAD'S DEXTRI-MALTOSE
in Infant Feeding

MEAD'S DEXTRI-MALTOSE (Dextrins & Maltose) is a form of carbohydrate that, when added to cow's milk and water in the proportions best suited to meet the nutritional demands of the bottle-fed infant, usually gives gratifying results. *These gratifying results* are due to:

1st. Dextri-Maltose is a form of carbohydrate readily assimilated by the average infant and less liable to cause digestive disturbances.

2nd. *The control of the infant feeding case which the physician can easily exercise due to the ethical policy of Mead Johnson & Company.*

The Mead Policy

Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information in regard to feeding is supplied to the mother by written instructions from her doctor, who changes the feedings from time to time to meet the nutritional requirements of the growing infant. Literature furnished only to physicians.

In addition to
MEAD'S DEXTRI-MALTOSE
Mead also offers for the
physician's approval

MEAD'S CASEC
(*For the simple preparation of protein milk*)
and
MEAD'S COD LIVER OIL
(*A standardized antirachitic agent*)

Samples of these infant diet materials and literature describing their use will be sent at the physician's request.

MEAD JOHNSON & COMPANY
Makers of Infant Diet Materials
EVANSVILLE, INDIANA, U. S. A.

PUNKTAL LENSES

SOFT-LITE LENSES

Will Give Your Patient

Perfect Vision Clear to the Rim

The ideal lens should enable the wearer to see objects undistorted and with equal distinctness no matter in what direction the eye looks through it, whether through center or margin.

PUNKTALS represent the most perfect aid to sight that modern science has yet developed.

because

Of all the different front and back curves that will make any given lens power, there is but one combination that will produce a lens free from astigmatism throughout the entire field.

PRESCRIBE PUNKTALS
YOU ARE USING
THE BEST

Relief from that Tired Feeling

A recent issue of the National American Magazine contained the following article by Frank B. Gilbreth, known authority on the subject he discusses:

"You probably have no conception of the price you pay in fatigue for letting the bright reflection from highly polished surfaces reach your eyes. The glare from the nickle on a typewriter, or from an ink bottle leaves its record in fatigue.

"You may not know what is annoying you; you may so concentrate on your work as to become unconscious of the annoyance; but the result is there just the same."

SOFT-LITE LENSES ELIMINATE ALL
GLARES AND GIVE RELIEF
FROM EXCESSIVE
ILLUMINATION

Deliveries Now at All Our Houses.

Detailed Literature on Request.

RIGGS OPTICAL COMPANY

Exclusively Wholesale

Three Houses in Nebraska

OMAHA **LINCOLN** **HASTINGS**

Sioux City

Madison, Wis.
Quincy
Salt Lake City
Cedar Rapids
Council Bluffs
Iowa City
Mankato
Fargo
Kansas City
Denver
Green Bay
Reno, Nev.
Oklahoma City
Wichita
Sioux Falls
Pocatello
Pittsburg, Kas.
Santa Ana
San Francisco
Ogden
Portland
Pueblo
Appleton
St. Paul
Boise
Los Angeles
Spokane
Waterloo
Great Falls
Oakland, Cal.
Seattle
Tacoma
Butte
Salina
Fort Dodge

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, March, 1925 No. 3

Philadelphia, Pa.
College of Physicians
22nd & Chestnut

OF PHILADELPHIA

CALCREOSE

R. Ramsden Wade reports (Brit. M. J. 1:158, Jan. 24, 1925) having had good results from the administration of creosote in the treatment of cases of influenzal pneumonia and chronic influenza which are very liable to be mistaken for phthisis.

Calcreose (calcium creosotate) is a mixture containing in loose chemical combination approximately equal weights of creosote and lime. It has the pharmacologic activity of creosote, but apparently does not have any untoward effect on the stomach.

POWDER - TABLETS - SOLUTION

Samples of Tablets on Request

THE MALTBIE CHEMICAL COMPANY - - - - Newark, New Jersey

A Suggestion to Professional Men

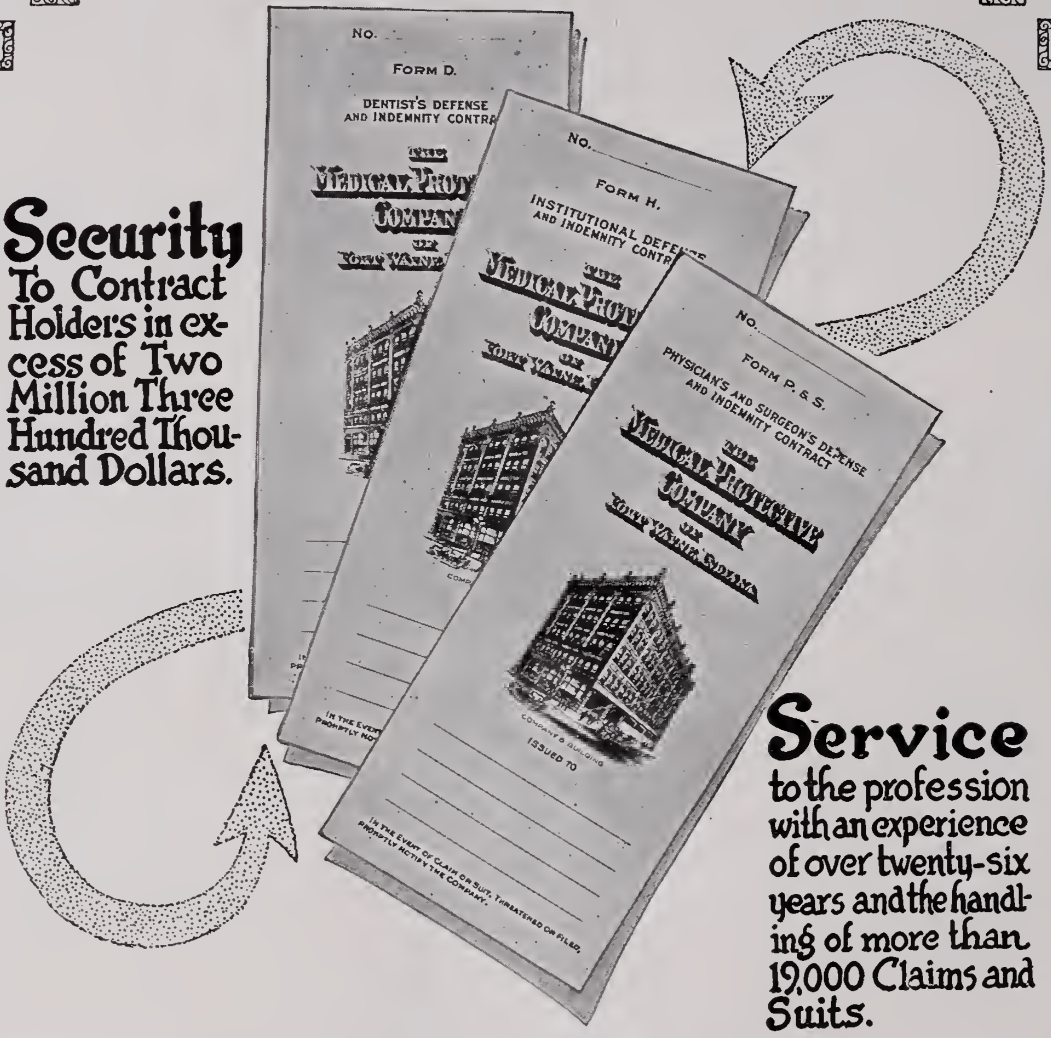
PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY

Farnam at Seventeenth


No.
FORM D.
DENTIST'S DEFENSE AND INDEMNITY CONTRA
No.
FORM H.
INSTITUTIONAL DEFENSE AND INDEMNITY CONTR
No.
FORM P. & S.
PHYSICIAN'S AND SURGEON'S DEFENSE AND INDEMNITY CONTRACT
THE MEDICAL PROTECTIVE COMPANY OF FORT WAYNE, INDIANA
COMPANY'S BUILDING
ISSUED TO
IN THE EVENT OF CLAIM OR SUIT, THREATENED OR FILED, PROMPTLY NOTIFY THE COMPANY.

Security
To Contract Holders in excess of Two Million Three Hundred Thousand Dollars.

Service
to the profession with an experience of over twenty-six years and the handling of more than 19,000 Claims and Suits.

Efficient Service Does Not Make Insurance Cost More, But Does Make It Worth More.

for
Medical Protective Service
Have a
Medical Protective Contract

THE
MEDICAL PROTECTIVE COMPANY
OF
FORT WAYNE, INDIANA

INFANT DIET MEAD'S MATERIALS

THE DOCTOR'S METHOD *of* MILK MODIFICATION *for* Infants

EVERY PHYSICIAN *has a method of feeding infants under his care. Much depends on his instructions being carried out.*

THE MEAD JOHNSON POLICY *prevents outside interference and doctors find that Mead's Dextri-Maltose, cow's milk and water, gives gratifying results in the majority of infants under their care.*

The Mead Policy

Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information in regard to feeding is supplied to the mother by written instructions from her doctor, who changes the feedings from time to time to meet the nutritional requirements of the growing infant. Literature furnished only to physicians.

INFANT MEAD'S DIET MATERIALS

In addition to

MEAD'S DEXTRI-MALTOSE

Mead also offers for the physician's approval

MEAD'S CASEC

(*For the simple preparation of protein milk*)

and

MEAD'S COD LIVER OIL

(*A standardized antirachitic agent*)

Samples of these infant diet materials and literature describing their use will be sent at the physician's request.

MEAD JOHNSON & COMPANY
Makers of Infant Diet Materials
EVANSVILLE, INDIANA, U. S. A.

When You Need Anything Ophthalmic or Optical

Turn to

RIGGS OPTICAL COMPANY

Headquarters for

GENOTHALMIC UNIT

—INSTRUMENTS, such as Refractors, Phoro-Optometers, Ophthalmometers, Perimeters, DiagnosticSets.

—TRIAL SETS of all kinds. Electrically Illuminated Testing Cabinets, Fitting Sets, etc.

—REFRACTION ROOM FURNITURE and equipment.

—OPTICAL STOCK of all kinds—the Staples and the Newest and Best upon the Market.

—ARTIFICIAL EYES, Both Reform and Shell, in Greatest Variety.

—PRESCRIPTION SERVICE, that is Thoroughly Dependable both as to Quality and Speed.

RIGGS OPTICAL COMPANY

Exclusively Wholesale

Three Houses in Nebraska

OMAHA **LINCOLN** **HASTINGS**

Sioux City

Madison, Wis.
Quincy
Salt Lake City
Cedar Rapids
Council Bluffs
Iowa City
Mankato
Fargo
Kansas City
Denver
Green Bay
Reno, Nev.
Oklahoma City
Wichita
Sioux Falls
Pocatello
Pittsburg, Kas.
Santa Ana
San Francisco
Ogden
Portland
Pueblo
Appleton
St. Paul
Boise
Los Angeles
Spokane
Waterloo
Great Falls
Oakland, Cal.
Seattle
Tacoma
Butte
Salina
Fort Dodge

THE NEBRASKA STATE MEDICAL J[illegible]RNAL

Philadelphia, Pa
College of Physicians
22nd & Chestnut

ESTABLISHED 1916 BY THE NEBRASKA STATE ME[illegible] ASSOCIATION

Vol. X. Norfolk, Nebraska, April, 1925 No. 4

CALCREOSE

R. Ramsden Wade reports (Brit. M. J. 1:158, Jan. 24, 1925) having had good results from the administration of creosote in the treatment of cases of influenzal pneumonia and chronic influenza which are very liable to be mistaken for phthisis.

Calcreose (calcium creosotate) is a mixture containing in loose chemical combination approximately equal weights of creosote and lime. It has the pharmacologic activity of creosote, but apparently does not have any untoward effect on the stomach.

POWDER - TABLETS - SOLUTION

Samples of Tablets on Request

THE MALTBIE CHEMICAL COMPANY - - - Newark, New Jersey

COLLEGE OF PHYSICIANS
LIBRARY
APR 7 1925
OF PHILADELPHIA

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

DIATHERMIA with THE STANDARD Jr.

WHY

Are the Leading Authorities, Hospitals and Clinics using the STANDARD JUNIOR?

BECAUSE

Upon investigation they found

Perfect Control

Six Point type control switch is the impedance coil of special design. This design always allowed the delivery of a real cold spark for dessication work when on the lowest settings to the heaviest currents for surgical medical work when the control is advanced to succeeding settings.

The Spark Gap

Is equipped with ten tungsten tipped points, open type, air cooled. Special bevel gear control assuring perfect alignment of points and very fine control. This type spark gap was first used by the Standard Junior.

The Oscillating Circuits

Comprises of a large capacity, high voltage resonator and two large condensors of the balanced type on each side of the line insuring perfect resonance. The Paramount importance of resonance cannot be overlooked in high frequency apparatus. Success or failure depends on this whether or not your machine is resonant.

The Highest Voltage Transformer

Is immersed in oil—weight 215 lbs. alone, which is more than most high frequency machines weigh complete. Any electrical engineer will tell you that it requires a heavy transformer to produce both voltage and milliamperage. Milliamperage alone tells nothing about the capacity of high frequency apparatus—true capacity is determined only by the voltage behind the milliamperage—penetration of high frequency apparatus depends only upon high voltage in Diathermia the same as the X-ray specialist requires high voltage for penetration of the X-ray. There is a reason why the Standard Junior is used in more large, reputable, ethical Hospitals and Institutions than any other. Write for a list of users. Write for literature.

Best by Test

MAIL COUPON TODAY

tear on this line

WESTERN X-RAY COMPANY,
324 So. 19th St.,
Omaha, Nebraska

Date..........

Gentlemen:—Without obligation on my part..........

....

Name..........

Address..........

INFANT DIET MEAD'S MATERIALS

Live Food For Babies

There is none so good

First thought—

BREAST MILK

Second thought—

FRESH COW'S MILK
WATER *and*
MEAD'S DEXTRI-MALTOSE

For Your Convenience
Pamphlet on Breast Milk
Pamphlet on Dextri-Maltose

The Mead Johnson Policy

Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information in regard to feeding is supplied to the mother by written instructions from her doctor, who changes the feedings from time to time to meet the nutritional requirements of the growing infant. Literature furnished only to physicians.

INFANT MEAD'S DIET MATERIALS

MEAD JOHNSON & COMPANY
Evansville, Ind., U. S. A.

ALL OUR HOUSES

Ready to Serve You With

Known Quality Merchandise

RIGGS OPTICAL COMPANY—The Stock House of the West—calls your attention to the nature of its stocks. A matter of which we feel justly proud.

The cream of the optical merchandise of the world comprises our stock. **Recognized, branded, known merchandise**—each item a leader in its field—every article known for its high standard of quality.

You can, therefore, have implicit confidence in sending your orders for quality merchandise to each and every Riggs Optical Company house—and be assured that the Riggs Manager will execute your order faithfully.

"The Stock House of the West" is ready to serve you with the best optical merchandise the world affords—and at the market's most reasonable prices.

If it's a quality item—Riggs has it!

RIGGS OPTICAL COMPANY

Exclusively Wholesale

Three Houses in Nebraska

OMAHA LINCOLN HASTINGS

Sioux City

Madison, Wis.
Quincy
Salt Lake City
Cedar Rapids
Council Bluffs
Iowa City
Mankato
Fargo
Kansas City
Denver
Green Bay
Reno, Nev.
Oklahoma City
Wichita
Sioux Falls
Pocatello
Pittsburg, Kas.
Santa Ana
San Francisco
Ogden
Portland
Pueblo
Appleton
St. Paul
Boise
Los Angeles
Spokane
Waterloo
Great Falls
Oakland, Cal.
Seattle
Tacoma
Butte
Salina
Fort Dodge
Rockford

ANNUAL MEETING, LINCOLN, MAY 12, 13, 14

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, May, 1925 No. 5

CALCREOSE

R. Ramsden Wade reports (Brit. M. J. 1:158, Jan. 24, 1925) having had good results from the administration of creosote in the treatment of cases of influenzal pneumonia and chronic influenza which are very liable to be mistaken for phthisis.

Calcreose (calcium creosotate) is a mixture containing in loose chemical combination approximately equal weights of creosote and lime. It has the pharmacologic activity of creosote, but apparently does not have any untoward effect on the stomach.

POWDER - TABLETS - SOLUTION

Samples of Tablets on Request

THE MALTBIE CHEMICAL COMPANY - - Newark, New Jersey

COLLEGE OF PHYSICIANS
LIBRARY
MAY 5 1925

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

For that Stubborn Case of Mal-nutrition

WHEN food does not feed—when even milk, the most nearly perfect of all nutritional foods, fails to nourish, it has been found that the addition of 1% of pure, unflavored, unsweetened gelatine to the milk overcomes the difficulty.

The protective colloidal ability of the gelatine, in preventing the coagulation caused by the enzyme rennin and hydrochloric acid of the gastric juice, will largely prevent stomach curdling and insure the complete assimilation of all the nutritional elements of the milk.

Thomas B. Downey, Ph. D., of Mellon Institute, University of Pittsburgh, has clearly proved by a series of standard feeding tests that the addition of 1% of pure, plain gelatine, dissolved and added to milk, will increase the nutritional yield by about 23%. The approved formula is here given:

> Soak for ten minutes one level tablespoonful of Knox Sparkling Gelatine in ½ cup of cold milk taken from the baby's formula; cover while soaking; then place the cup in boiling water, stirring until gelatine is fully dissolved; add this dissolved gelatine to the regular formula.

For children and adults follow the same method in the proportion of ½ teaspoonful of gelatine to a glass of milk.

To safeguard against impurities and disturbing acidity it is essential to specify a plain, unflavored, unsweetened gelatine, such as Knox Sparkling Gelatine—the Highest Quality for Health.

A package of Knox Sparkling Gelatine, together with the physician's reference book of nutritional diets with recipes, will be sent free, to any physician if he will write to the Knox Gelatine Laboratories, 429 Knox Avenue, Johnstown, N. Y.

INFANT DIET MEAD'S MATERIALS

FEEDING THE AVERAGE INFANT

The proper food for the infant is
Mother's Milk

Complemental feedings of Fresh Cow's Milk, Water and Mead's Dextri-Maltose are very helpful to the infant's nutrition when the supply of Breast Milk is insufficient.

When Summer (Fermentative) Diarrhea is present, Mead's Casec will generally give gratifying results.

If Infant Diet Materials of quality are needed, MEAD'S products may be used with Confidence by physicians.

Samples of Mead's Dextri-Maltose
Samples of Mead's Casec

INFANT MEAD'S DIET MATERIALS

The Mead Policy

Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information in regard to feeding is supplied to the mother by written instructions from her doctor, who changes the feedings from time to time to meet the nutritional requirements of the growing infant. Literature furnished only to physicians.

INFANT MEAD'S DIET MATERIALS

MEAD JOHNSON & COMPANY
Evansville, Indiana, U. S. A.

Riggs Rimless Demonstration Set

No. 500

not a fitting set for dimensions—not intended to replace the customary finger-piece and spectacle fitting sets. Instead, this new set is designed to help you show your patients the newest shapes in lenses. It's a sensible demonstration of the finer art of making spectacles and eyeglasses.

You've wanted something of this sort many a time for the patient to whom the ordinary run of glasses did not appeal or was not especially suitable. Well, here's your answer in the new Riggs Rimless Demonstration Set. You'll save time, and you'll afford your patients a greater degree of satisfaction, if you permit them to inspect the different styles in this set before the glasses are ordered made up. And your discriminating clientele will appreciate the nice courtesy thus extended them.

The No. 500 Demonstration Set Comprises:

1.—An attractive velvet-lined folding case.
2.—A descriptive card informing you just how to order various styles of mountings and shapes of lenses included in the set, as well as the same mountings in different qualities of metal.
3.—Six white gold filled mountings — three, finger-piece; two, flat side comfort cable cylinder bridge rimless spectacle mountings; and one, wire riding bow saddle bridge rimless spectacle mounting.
4.—Six pairs of lenses assembled in the mountings just referred to, comprising the latest, most popular and practical shapes. An assortment that provides lenses suitable for any face.

To avoid the commonplace, make your selection from this set. Your patient will welcome distinction in glasses. Give him the opportunity to get it!

No. 500—Riggs Rimless Demonstration Set. Price only $14.85 net.

RIGGS OPTICAL COMPANY

Exclusively Wholesale

Three Houses in Nebraska

OMAHA LINCOLN HASTINGS
Sioux City

Madison, Wis.
Quincy
Salt Lake City
Cedar Rapids
Council Bluffs
Iowa City
Mankato
Fargo
Kansas City
Denver
Green Bay
Reno, Nev.
Oklahoma City
Wichita
Sioux Falls
Pocatello
Pittsburg, Kas.
Santa Ana
San Francisco
Ogden
Portland
Pueblo
Appleton
St. Paul
Boise
Los Angeles
Spokane
Waterloo
Great Falls
Oakland, Cal.
Seattle
Tacoma
Butte
Salina
Fort Dodge
Rockford

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, June, 1925 No. 6

CALCREOSE

R. Ramsden Wade reports (Brit. M. J. 1:158, Jan. 24, 1925) having had good results from the administration of creosote in the treatment of cases of influenzal pneumonia and chronic influenza which are very liable to be mistaken for phthisis.

Calcreose (calcium creosotate) is a mixture containing in loose chemical combination approximately equal weights of creosote and lime. It has the pharmacologic activity of creosote, but apparently does not have any untoward effect on the stomach.

POWDER - TABLETS - SOLUTION

Samples of Tablets on Request

THE MALTBIE CHEMICAL COMPANY - - - Newark, New Jersey

COLLEGE OF PHYSICIANS
LIBRARY
JUN 15 1925
OF PHILADELPHIA

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

THE TREND IN CLINICAL MEDICINE
IS TOWARD THE MORE EXTENSIVE EMPLOYMENT OF

Tetanus Antitoxin

FOR CURATIVE PURPOSES

ANTITETANIC SERUM was at one time generally regarded as an efficient prophylactic rather than as a curative agent. But there is an unmistakable trend nowadays toward the use of antitetanic serum as a specific curative agent as well.

A prominent surgeon writes us: "A great deal of the pessimism in the use of serum for curative purposes is perhaps because it is not given by the best route and in large enough doses. My statistics, as far as I have gone at present, show that in cases that have received a dose of 30,000 units by vein the mortality is only 3 per cent. It will probably be much better than this if one should cut down to the cases that have received this dose in the first three days of the tetanus symptoms."

Certain it is that early diagnosis and large therapeutic doses have materially lowered the mortality.

TETANUS ANTITOXIN, P. D. & CO., commends itself to the discriminating physician because of its high refinement, small bulk, and gratifying reliability.

Our Tetanus Toxin is of such strength and uniformity that healthy young horses under treatment with it, consistently produce a native antitetanic serum of relatively high potency.

Then, our methods of concentration have been developed to such a point that the globulin resulting from this native serum represents Tetanus Antitoxin of the highest quality, chemically and biologically.

Finally, our syringe package, fitted with an improved plunger, is proving decidedly satisfactory.

Requests for literature are always welcomed.

PARKE, DAVIS & COMPANY
DETROIT - MICHIGAN

TETANUS ANTITOXIN, P. D. & CO., IS INCLUDED IN THE N. N. R. BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION

INFANT DIET MEAD'S MATERIALS

CONTROLLING THE INFANT'S DIET

The physician knows the requirements of the individual baby—he alone is fitted to prescribe and to regulate the infant's diet.

His prescribing of the proper food, based upon the infant's nutritional requirements, is of far more advantage to the infant than a printed set of rules on the label or bottle.

The trained physician eliminates guesswork. He gives the mother a feeding formula and expects her to follow his directions.

The physician who prescribes MEAD'S Infant Diet Materials knows his instructions will be followed to the letter. There are no directions on the packages to conflict with his formula for each individual baby.

MEAD'S DEXTRI-MALTOSE
Cow's Milk and Water
meet the demands of the average well baby

MEAD'S CASEC
and
MEAD'S POWDERED PROTEIN MILK
are very satisfactory in treating Summer (Fermentative) Diarrhea

Samples of these products and literature sent on request

INFANT MEAD'S DIET MATERIALS

The Mead Policy

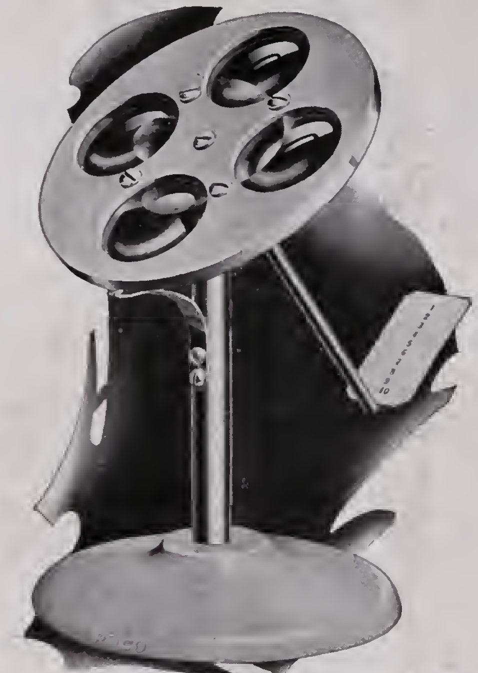
Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information in regard to feeding is supplied to the mother by written instructions from her doctor, who changes the feedings from time to time to meet the nutritional requirements of the growing infant. Literature furnished only to physicians

INFANT MEAD'S DIET MATERIALS

MEAD JOHNSON & COMPANY
Evansville, Indiana, U. S. A.

The Bifocal Comparator

An Untiring Salesman



Show your
Patients the
Difference

It will
Aid Your
Sales

Price $12.50

Four Bifocals Demonstrated
- Ultex
- Kryptok
- Cement
- C V Bifocal

Attractive . Scientific . Practical

Which bifocal gives the patient the best service, upbuilds your reputation and makes the right profit for you — the best or the cheap bifocal? Show your patients the different bifocals and they will surely want the best.

FOR SALE EXCLUSIVELY BY

RIGGS OPTICAL COMPANY

Exclusively Wholesale

Three Houses in Nebraska

OMAHA LINCOLN HASTINGS

Sioux City

Madison, Wis.
Quincy
Salt Lake City
Cedar Rapids
Council Bluffs
Iowa City
Mankato
Fargo
Kansas City
Denver
Green Bay
Reno, Nev.
Oklahoma City
Wichita
Sioux Falls
Pocatello
Pittsburg, Kas.
Santa Ana
San Francisco
Ogden
Portland
Pueblo
Appleton
St. Paul
Boise
Los Angeles
Spokane
Waterloo
Great Falls
Oakland, Cal.
Seattle
Tacoma
Butte
Salina
Fort Dodge
Rockford

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, July, 1925 No. 7

CALCREOSE

R. Ramsden Wade reports (Brit. M. J. 1:158, Jan. 24, 1925) having had good results from the administration of creosote in the treatment of cases of influenzal pneumonia and chronic influenza which are very liable to be mistaken for phthisis.

Calcreose (calcium creosotate) is a mixture containing in loose chemical combination approximately equal weights of creosote and lime. It has the pharmacologic activity of creosote, but apparently does not have any untoward effect on the stomach.

POWDER - TABLETS - SOLUTION

Samples of Tablets on Request

THE MALTBIE CHEMICAL COMPANY - - - - Newark, New Jersey

COLLEGE OF PHYSICIANS LIBRARY JUL 1925 OF PHILADELPHIA

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

1. *Mix one fluid drachm of Squibb's Liquid Petrolatum with Agar with five fluid drachms of water.*

2. *Pour the mixture into a test tube and heat to boiling point over a Bunsen burner or alcohol flame. Then cool under running water until thoroughly cold.*

3. *The material in test tube will be found to be a jelly, no longer fluid, and will not pour even though tube is turned up-side-down. Any other product of this character on the market can also be easily tested for agar content by the same method. If the agar content is low, the material in the test tube will not solidify, but will remain in its original liquid form.*

Test for Yourself the Superiority of

SQUIBB'S

LIQUID PETROLATUM

WITH AGAR

SQUIBB'S LIQUID PETROLATUM WITH AGAR contains about 30% of agar gel, or "prepared" agar, equivalent to 1½% of dry agar. Proof of this exceptional agar content can easily be substantiated through a simple test that clearly indicates the superiority of this new Squibb Product.

SQUIBB'S LIQUID PETROLATUM WITH AGAR was developed by the Squibb Laboratories in response to a growing demand of the Medical Profession for a product that could be prescribed with confidence. It is especially intended for patients who have an aversion for plain oils; or for those who need the combined therapeutic effects of a lubricating mineral oil and the bulk supplied by agar.

This smooth creamy emulsion is readily taken by the most fastidious because of its pleasant taste. It does not separate on standing.

This product contains *no phenolphthalein.*
Combining an active cathartic with a physiologically indifferent intestinal lubricant, is unscientific and irrational—especially when the product is intended for continued use.

E·R·SQUIBB & SONS, NEW YORK

MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858

INFANT DIET MEAD'S MATERIALS

When the Infant Has Diarrhoea

PROTEIN MILK feeding to the infant with summer (fermentative) diarrhoea is generally followed with gratifying results.

PROTEIN MILK made with MEAD'S CASEC is simple to prepare.

CASEC is one of the physicians' first thoughts for infants of this type.

Samples of CASEC together with literature describing its use in diarrhoeas furnished immediately on request.

INFANT MEAD'S DIET MATERIALS

The Mead Policy

Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information in regard to feeding is supplied to the mother by written instructions from her doctor, who changes the feedings from time to time to meet the nutritional requirements of the growing infant. Literature furnished only to physicians

INFANT MEAD'S DIET MATERIALS

MEAD JOHNSON & COMPANY
Evansville, Indiana, U. S. A.

The Glazed Goods Evil

It is generally conceded that the foremost among the shortcomings of the optical business has been the indiscriminate sale of focus or "ready-made" glasses.

Goods of this class have gone far beyond the province of the refractionist, and have been sold in vast quantities to merchants engaged in a variety of businesses.

This situation has worried conscientious optical people. They have realized that the ignorant, unsuspecting public was being victimized through the sale of these "ready-mades" where carefully fitted glasses were required.

How to put a stop to so vicious a practice—not whether or not it should be stopped—was the question.

The solution, we think, is comparatively simple. It lies largely in the hands of the factory and the wholesaler. Both must absolutely refuse to sell focus spectacles except to those who are authorized by law to fit glasses.

Riggs Optical Company, for one, will do its part. Focus goods are sold by us only to authorized refractionists. This policy protects you—it safeguards the public. It is the policy of fairness and progress.

Riggs Optical Company Sells Ophthalmic Lenses and Frames to Licensed Refractionists Only

RIGGS OPTICAL COMPANY

Exclusively Wholesale

Three Houses in Nebraska

OMAHA LINCOLN HASTINGS

Sioux City

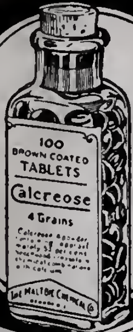
Madison, Wis.
Quincy
Salt Lake City
Cedar Rapids
Council Bluffs
Iowa City
Mankato
Fargo
Kansas City
Denver
Green Bay
Reno, Nev.
Oklahoma City
Wichita
Sioux Falls
Pocatello
Pittsburg, Kas.
Santa Ana
San Francisco
Ogden
Portland
Pueblo
Appleton
St. Paul
Boise
Los Angeles
Spokane
Waterloo
Great Falls
Oakland, Cal.
Seattle
Tacoma
Butte
Salina
Fort Dodge
Rockford

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, August, 1925 No. 8

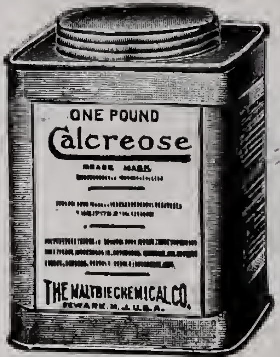
Calcreose



Intestinal Antisepsis

Attempts at intestinal antisepsis in the treatment of diseases of the intestinal tract that occur commonly during the hot summer months are considered important by many physicians. Creosote is regarded as an intestinal antiseptic of promise. Many physicians prescribe CALCREOSE for that purpose because it is a mixture of approximately equal parts of pure beechwood creosote and calcium oxid and can be taken for a long time without apparently causing any gastro-intestinal disturbance; nor do patients object to its long continued use. Samples of Tablets on Request.

The MALTBIE CHEMICAL COMPANY
NEWARK, NEW JERSEY



E OF PHYSICIANS
LIBRARY
OF PHILADELPHIA

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

It Is A Family Duty To Carry A Medical Protective Contract

The necessity is emphasized by the facts in file No. 03596. The following was received from our local attorneys, while the case was in process of litigation.

> "I beg to advise that today Mrs.———, the wife of your assured in this case, called me by phone and advised that her husband, Mr. ———, had died on March 24th.
>
> The case is now pending on demurrer and it is not likely that much, if anything, will ever be done with it, although of course they can go ahead and have the administrator or executor substituted."

After a lapse of six months the widow was served with a summons and in advising us, said among other things:

"The Medical Protective Co.,
Fort Wayne, Ind.
Gentlemen:

* * * * * * * * * * *

I suppose they think that my husband, Dr. ——— ———, left a lot of money. The whole thing does not amount to Five Thousand Dollars, and I have three small children to raise".

The Doctor dead and the defense handicapped because he is not present to prove the propriety of his treatment, the widow financially unable to pay for own defense and endure a judgment; the raising and educating of three children dependent upon the wisdom of the Doctor in carrying a Medical Protective Contract.

TWENTY PER CENT OF WISDOM CONSISTS OF BEING WISE IN TIME

For Medical Protective Service have a Medical Protective Contract

THE
MEDICAL PROTECTIVE COMPANY
OF
FORT WAYNE, INDIANA

INFANT DIET MEAD'S MATERIALS

Choosing an Infant's Diet

If all babies were *alike* and *standardized,* then one food would probably take care of the nutritional requirements of most babies.

BUT—physicians know that foods must be altered to suit the nutritional requirements of each infant.

MEAD'S INFANT DIET MATERIALS are helping physicians to do *scientific* infant feeding.

MEAD'S DEXTRI-MALTOSE, (the carbohydrate of choice for modified cow's milk mixtures).

MEAD'S CASEC (a useful adjunct when the baby is suffering from Fermentative Diarrhea).

MEAD'S STANDARDIZED COD LIVER OIL (as important to protect the infant from Rickets as orange juice protects from scurvy).

The Mead Policy

Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information in regard to feeding is supplied to the mother by written instructions from her doctor, who changes the feedings from time to time to meet the nutritional requirements of the growing infant. Literature furnished only to physicians

INFANT MEAD'S DIET MATERIALS

MEAD JOHNSON & COMPANY
Evansville, Indiana, U. S. A.

A Trade Mark is a Promise

DID you ever think of it in just that way? A trade mark is the promise of the manufacturer that the goods he sends out under his mark will always conform to an established standard.

For example, the mark shown above identifies a specific grade of prescription work, the quality of which we certify to and guarantee by virtually signing our name to each job that leaves a Riggs shop.

It is our promise of unfailing uniformity; of utmost precision; of dependable service. And we can no more repudiate that promise than we can go back on any other signed agreement. To do so would be to jeopardize the good will and confidence that have been built up during the twenty years of our existence.

◆

RIGGS OPTICAL COMPANY

Exclusively Wholesale

Three Houses in Nebraska

OMAHA LINCOLN HASTINGS

Sioux City

Madison, Wis.
Quincy
Salt Lake City
Cedar Rapids
Council Bluffs
Iowa City
Mankato
Fargo
Kansas City
Denver
Green Bay
Reno, Nev.
Oklahoma City
Wichita
Sioux Falls
Pocatello
Pittsburg, Kas.
Santa Ana
San Francisco
Ogden
Portland
Pueblo
Appleton
St. Paul
Boise
Los Angeles
Spokane
Waterloo
Great Falls
Oakland, Cal.
Seattle
Tacoma
Butte
Salina
Fort Dodge
Rockford

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, September, 1925 No. 9

Calcreose

Intestinal Antisepsis

Attempts at intestinal antisepsis in the treatment of diseases of the intestinal tract that occur commonly during the hot summer months are considered important by many physicians. Creosote is regarded as an intestinal antiseptic of promise. Many physicians prescribe CALCREOSE for that purpose because it is a mixture of approximately equal parts of pure beechwood creosote and calcium oxid and can be taken for a long time without apparently causing any gastro-intestinal disturbance; nor do patients object to its long continued use. Samples of Tablets on Request.

The MALTBIE CHEMICAL COMPANY
NEWARK, NEW JERSEY

100 BROWN COATED TABLETS Calcreose 4 Grains

ONE POUND Calcreose

THE MALTBIE CHEMICAL CO. NEWARK, N.J. U.S.A.

COLLEGE OF PHYSICIANS OF PHILADELPHIA
LIBRARY
SEP 11 1925

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

All Legally Qualified Physicians are invited to attend the Physio-Electro Therapy Courses of

DR. C. M. SAMPSON

to be held in Omaha, Nebr., Oct 19th to 24th inclusive

Three Days of Demonstrations

Six hours each day by Dr. Sampson who will give you his vast research work and clinical experience while in charge of the largest clinics in the reconstruction period of the army and public health service.

Three Days of Scientific Work

Consisting of Lectures on Electrotherapy, Electrocoagulation, Actiniotherapy, Mecanotherapy, Hydrotherapy.

An Unusually Large Attendance

Is anticipated because of the great attention this work is attracting. Dr. Sampson is nationally and favorably known throughout the Ethical Medical Profession.

There will be sufficient apparatus of different makes for demonstrations.

Plan now to attend this fall course. Dr. Sampson has requested the Western X-Ray to accept bona fide registrations for his class to be held in a large well-prepared lecture room at 322 So. 19th St., Omaha, Neb.

-------------------------------CUT HERE--------------------------------

The Western X-Ray Co.
320 So. 19th St.
OMAHA, NEBR.

Price $50.00

Date________________________________

Gentlemen: Please enroll me for Dr. Sampson course to be held in Omaha, Oct. 19 to 24 inclusive. I herewith enclose $10.00 to apply on the course and the balance I will pay $40.00 at the first lecture.

Name ____

City________________________ State________________

INFANT DIET MEAD'S MATERIALS

INFANT DIET MATERIALS

These valuable Infant Diet Materials are
offered for your consideration and approval:

MEAD'S DEXTRI-MALTOSE

Used in the modification
of regular milk mixtures

◆

MEAD'S CASEC

Used in the feeding of infants with fermentative diarrhea

◆

MEAD'S COD LIVER OIL

A tested Antirachitic Agent

◆

MEAD JOHNSON & COMPANY
Evansville, Indiana, U. S. A.
Manufacturers of Infant Diet Materials

INFANT MEAD'S DIET MATERIALS

MEAD JOHNSON & COMPANY,
Evansville, Indiana

Gentlemen:—

Send me the following literature and samples checked:

- ☐ Mead's Dextri-Maltose
- ☐ Mead's Casec
- ☐ Mead's Cod Liver Oil

Name..

Address..

INFANT MEAD'S DIET MATERIALS

RIGGS

Has Always Sponsored Quality and Therefore Recommends

Punktals **Soft-Lites**

Ultex Bifocals

C V Monocentrics **Twintex Frames**

Nuway Artshels

These are builders of practice. They have helped others. They will help you

Let our traveler demonstrate to you or call upon our nearest house.

Distributed by

RIGGS OPTICAL COMPANY

Exclusively Wholesale

Three Houses in Nebraska

OMAHA LINCOLN HASTINGS

Sioux City

- Madison, Wis.
- Quincy
- Salt Lake City
- Cedar Rapids
- Council Bluffs
- Iowa City
- Mankato
- Fargo
- Kansas City
- Denver
- Green Bay
- Reno, Nev.
- Oklahoma City
- Wichita
- Sioux Falls
- Pocatello
- Pittsburg, Kas.
- Santa Ana
- San Francisco
- Ogden
- Portland
- Pueblo
- Appleton
- St. Paul
- Boise
- Los Angeles
- Spokane
- Waterloo
- Great Falls
- Oakland, Cal.
- Seattle
- Tacoma
- Butte
- Salina
- Fort Dodge
- Rockford

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, October, 1925 No. 10

Calcium Deficiency

100
BROWN COATED
TABLETS
Calcreose
4 Grains
Calcreose A powder containing approximately 50 per cent beechwood creosote in chemical combinations with calcium
THE MALTBIE CHEMICAL CO
NEWARK, N.J.

NOT ALONE for the creosote content may CALCREOSE be administered but also for its calcium content. Many physicians are prescribing calcium to overcome a calcium deficiency.

CALCREOSE is a mixture of approximately equal parts of creosote and calcium oxid that can be taken for a long time, and in comparatively large doses without apparently causing any gastro-intestinal disturbance; nor do patients object to its long continued use.

Samples of Tablets on Request.

THE MALTBIE CHEMICAL COMPANY
Newark, New Jersey

CALCREOSE

COLLEGE OF PHYSICIANS
LIBRARY
OCT
OF PHILADELPHIA

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

What an Eminent Physician Says

about Gelatine in Milk for Infant Feeding

DR. JOSEPH LEIDY, of Philadelphia, says: "The combination of Gelatine and milk in infant feeding was long used by my father and the late Dr. W. Pepper. I have continued to use it during the past thirty years, and am of the opinion that it gives results when many other combinations fail." (*Quoted by permission.*)

Thomas B. Downey, Ph. D., Fellow of Mellon Institute, Pittsburgh, has by standard feeding test, determined that the addition of pure, plain unflavored Gelatine increases the nourishment obtainable from the milk by about 23%.

The approved method of combining Gelatine with milk is as follows:

Soak, for ten minutes, one level tablespoonful of pure, unflavored, unsweetened Gelatine in one-half cup of cold milk taken from the baby's formula; cover while soaking; then place the cup in boiling water, stirring until Gelatine is fully dissolved; add this dissolved Gelatine to the quart of cold milk or regular formula.

Physicians are cautioned to prescribe only pure, unflavored and unsweetened Gelatine—the purest form of which is Knox Sparkling Gelatine — highest quality for health—produced by the most scientific methods, and under constant bacteriological and chemical laboratory control. It contains no artificial flavoring—no sweetening.

FREE--To Physicians and Hospitals
The Physician's reference book of nutritional diets with recipes will be sent free to physicians or hospitals, upon request, if they will address the Knox Gelatine Laboratories, 429 Knox Avenue, Johnstown, N. Y.

In addition to the family size packages of "Plain Sparkling" and "Sparkling Acidulated" (which latter contains a special envelope of lemon flavoring), Knox Sparkling Gelatine is put up in 1 and 5 pound cartons for special hospital use.

KNOX
SPARKLING
GELATINE
"The Highest Quality for Health"

Free from harmful acidity, artificial coloring and synthetic flavoring.

INFANT DIET MEAD'S MATERIALS

INFANT DIET MATERIALS

These valuable Infant Diet Materials are offered for your consideration and approval:

MEAD'S DEXTRI-MALTOSE

Used in the modification
of regular milk mixtures

❧

MEAD'S CASEC

Used in the feeding of infants with fermentative diarrhea

❧

MEAD'S COD LIVER OIL

A tested Antirachitic Agent

❧

MEAD JOHNSON & COMPANY
Evansville, Indiana, U. S. A.
Manufacturers of Infant Diet Materials

INFANT MEAD'S DIET MATERIALS

MEAD JOHNSON & COMPANY,
Evansville, Indiana

Gentlemen:—

Send me the following literature and samples checked:

☐ Mead's Dextri-Maltose
☐ Mead's Casec
☐ Mead's Cod Liver Oil

Name..

Address..

INFANT MEAD'S DIET MATERIALS

The Glazed Goods Evil

IT is generally conceded that the foremost among the shortcomings of the optical business has been the indiscriminate sale of focus or "ready-made" glasses.

Goods of this class have gone far beyond the province of the refractionist and have been sold in vast quantities to merchants engaged in a variety of businesses.

This situation has worried conscientious optical people. They have realized that the ignorant, unsuspecting public was being victimized through the sale of these "ready-mades" where carefully fitted glasses were required.

How to put a stop to so vicious a practice—not whether or not it should be stopped—was the question.

The solution, we think, is close at hand. It lies largely in the hands of the factory and the wholesaler. Both must absolutely refuse to sell focus spectacles except to those who are authorized by law to fit glasses.

Riggs Optical Company, for one, is doing its part. Focus goods are sold by us only to authorized refractionists. This policy protects you—it safeguards the public. It is the policy of fairness and progress.

Riggs Optical Company

Sells Ophthalmic Frames and Lenses
To Authorized Refractionists ONLY!

RIGGS OPTICAL COMPANY

Exclusively Wholesale

Three Houses in Nebraska

OMAHA LINCOLN HASTINGS

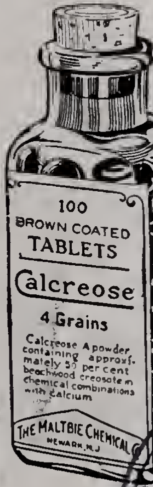
Sioux City

Madison, Wis.
Quincy
Salt Lake City
Cedar Rapids
Council Bluffs
Iowa City
Mankato
Fargo
Kansas City
Denver
Green Bay
Reno, Nev.
Oklahoma City
Wichita
Sioux Falls
Pocatello
Pittsburg, Kas.
Santa Ana
San Francisco
Ogden
Portland
Pueblo
Appleton
St. Paul
Boise
Los Angeles
Spokane
Waterloo
Great Falls
Oakland, Cal.
Seattle
Tacoma
Butte
Salina
Fort Dodge
Rockford

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. X. Norfolk, Nebraska, November, 1925 No. 11


100
BROWN COATED
TABLETS
Calcreose
4 Grains
Calcreose A powder containing approximately 50 per cent beechwood creosote in chemical combinations with calcium
THE MALTBIE CHEMICAL
NEWARK, N.J

Calcium Deficiency

NOT ALONE for the creosote content may CALCREOSE be administered but also for its calcium content. Many physicians are prescribing calcium to overcome a calcium deficiency.

CALCREOSE is a mixture of approximately equal parts of creosote and calcium oxid that can be taken for a long time, and in comparatively large doses without apparently causing any gastro-intestinal disturbance; nor do patients object to its long continued use.

Samples of Tablets on Request.

THE MALTBIE CHEMICAL
COMPANY
Newark, New Jersey

CALCREOSE

COLLEGE OF PHYSICIANS
LIBRARY
NOV
PHILADELPHIA

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

SQUIBB ARSPHENAMINES

Neoarsphenamine Squibb

A superior product of the Squibb Laboratories. Freely soluble. Low in toxicity. High in therapeutic potency. Arsenic content not less than 20 per cent.

Sulpharsphenamine Squibb

Therapeutically effective as demonstrated by more than two years clinical use by prominent syphilologists.

Highest therapeutic index of the Arsphenamines.

May be administered intramuscularly, subcutaneously or intravenously.

Takes rank with Arsphenamine itself in chemical stability and therapeutic efficacy.

5-Cc. ampuls of Sterile Double-Distilled Water in packages of ten.

Send for Booklet

THE MODERN TREATMENT OF SYPHILIS

Descriptive Literature and Clinical Reports

E·R·SQUIBB & SONS, NEW YORK
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858.

INFANT DIET MEAD'S MATERIALS

Individualized Infant Feeding

There are more babies fed on fresh cow's milk than any other artificial food.

A vast majority of these babies are fed according to the physician's instructions to the mother.

A large number of these physicians use *Dextri-Maltose* as the modifier.

MEAD'S INFANT DIET MATERIALS

are appreciated by all physicians interested in pediatric work.

It is well worth while to every physician to write for our *Pediatric Tool Kit.*

INFANT MEAD'S DIET MATERIALS

The Mead Policy

Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information in regard to feeding is supplied to the mother by written instructions from her doctor, who changes the feedings from time to time to meet the nutritional requirements of the growing infant. Literature furnished only to physicians.

INFANT MEAD'S DIET MATERIALS

MEAD JOHNSON & COMPANY, Evansville, Indiana, U. S. A.
Manufacturers of Infant Diet Materials

The Glazed Goods Evil

IT is generally conceded that the foremost among the shortcomings of the optical business has been the indiscriminate sale of focus or "ready-made" glasses.

Goods of this class have gone far beyond the province of the refractionist and have been sold in vast quantities to merchants engaged in a variety of businesses.

This situation has worried conscientious optical people. They have realized that the ignorant, unsuspecting public was being victimized through the sale of these "ready-mades" where carefully fitted glasses were required.

How to put a stop to so vicious a practice—not whether or not it should be stopped—was the question.

The solution, we think, is close at hand. It lies largely in the hands of the factory and the wholesaler. Both must absolutely refuse to sell focus spectacles except to those who are authorized by law to fit glasses.

Riggs Optical Company, for one, is doing its part. Focus goods are sold by us only to authorized refractionists. This policy protects you—it safeguards the public. It is the policy of fairness and progress.

Riggs Optical Company

Sells Ophthalmic Frames and Lenses
To Authorized Refractionists ONLY!

RIGGS OPTICAL COMPANY

Exclusively Wholesale

Three Houses in Nebraska

OMAHA LINCOLN HASTINGS

Sioux City

Madison, Wis.
Quincy
Salt Lake City
Cedar Rapids
Council Bluffs
Iowa City
Mankato
Fargo
Kansas City
Denver
Green Bay
Reno, Nev.
Oklahoma City
Wichita
Sioux Falls
Pocatello
Pittsburg, Kas.
Santa Ana
San Francisco
Ogden
Portland
Pueblo
Appleton
St. Paul
Boise
Los Angeles
Spokane
Waterloo
Great Falls
Oakland, Cal.
Seattle
Tacoma
Butte
Salina
Fort Dodge
Rockford

Ypr

THE NEBRASKA STATE MEDICAL JOURNAL

E. R. Squibb & Sons,
80 Beekman St.,
New York, N. Y.

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDIC SOCIATION

Vol. X. Norfolk, Nebraska, December, 1925 No. 12

Calcium *Deficiency*

CALCREOSE is a mixture of approximately equal parts of creosote and calcium oxid that can be taken for a long time, and in comparatively large doses without apparently causing any gastro-intestinal disturbance; nor do patients object to its long continued use.

Samples of Tablets on Request

THE MALTBIE CHEMICAL COMPANY
Newark, New Jersey

COSE

LIBRARY
COLLEGE OF PHYSICIANS
OF PHILADE. PHIA.

Read check and pass on:

~~Miss Rickenbach~~

Dr

Dr. Fankhauser

Dr. Downing

~~Mr. Halstead~~

~~Mr. [illegible]~~

The Library

n to Professional Men

know that only years of training qualify
n, and also that years of experience are
l business judgment.
f years should be entrusted only to ex-

it of this company is directed by qualified
advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

GLAND PRODUCTS

Specification the Surest Guaranty of Clinical Results

UNIFORM methods cannot be employed for the extraction and desiccation of different glands. The best method of handling each gland must be determined by experiment, the processes of manufacture in each instance being designed with reference to the peculiarities of the particular gland in question to yield a satisfactory finished preparation.

The identity of the gland is of first importance, and this is particularly true of parathyroids. It is very easy to confuse other glands with the true parathyroid glands.

All glands employed by us must be normal. They are all examined for evidence of disease. Before desiccation, all non-glandular matter is removed; this procedure reduces the weight of the glands as they reach us, often to a large extent.

The greatest care is also exercised to select and dissect only that part of the gland which is required in the manufacture of the product, such as the corpus luteum, from ovaries, the anterior lobe from the pituitary body, ovarian residue from ovaries and the posterior lobe of the pituitary. Some glands, such as the thyroid, thymus, pineal, etc., are utilized in entirety. Where fatty tissue is present in excessive quantity it is removed by solvents in a way to prevent injury to the active gland substance.

To still further increase the activity of our gland products we pass the desiccated material, after it has been finely powdered, through sieves to get rid of the remnants of inactive fibrous and connective tissue.

Our gland products therefore represent only the useful parts of the raw material we receive, and for this among other reasons contain a maximum amount of the therapeutically active portion of the glands.

Only by specifying our gland products—by adding to his prescription for gland products the designation "P. D. & Co.," can the benefits of the careful work we do be secured by the prescriber.

We will gladly send literature on the gland products in which you are interested.

PARKE, DAVIS & COMPANY
DETROIT, MICHIGAN

INFANT DIET MEAD'S MATERIALS

Feeding Babies in Winter

Neither cow's milk nor breast-milk contains sufficient antirachitic power to protect all infants from RICKETS.

Also—during the winter months, babies are usually not exposed to a sufficient amount of sunlight to prevent RICKETS.

The prescribing of MEAD'S STANDARDIZED AND BIOLOGICALLY-ASSAYED COD LIVER OIL by the physician is one of the most valuable safeguards against RICKETS.

MEAD'S is not an ordinary COD LIVER OIL. Every step in its preparation, from the time the fish are caught until the oil is finally tested and bottled, is scientifically controlled. Its purity and potency is guaranteed.

Samples and literature furnished immediately on request.

INFANT MEAD'S DIET MATERIALS

The Mead Policy

Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information in regard to feeding is supplied to the mother by written instructions from her doctor, who changes the feedings from time to time to meet the nutritional requirements of the growing infant. Literature furnished only to physicians.

INFANT MEAD'S DIET MATERIALS

MEAD JOHNSON & COMPANY, Evansville, Indiana, U. S. A.
Manufacturers of Infant Diet Materials

Save 15 to 30 Minutes on Every Examination

Have you ever counted up the value of the time now being wasted in your refraction if you are not using the new Genothalmic Unit? Do you know how much more quickly you can determine the proper correction with this modern equipment?

The next time you examine a patient's eyes with your present apparatus, take notice of the many wasted motions, the lost time and tiring effort expended in assembling the instruments needed.

Look again at this illustration. It shows the facility with which one can refract with a Genothalmic Automatic Unit. Quietly, quickly and without confusion to either practitioner or patient, the examination proceeds step by step, to an early finding of the exact correction.

Everything you need is within easy reach, yet out of the way in an instant. We can't tell you all the many advantages it has in this small space.

Write today for full descriptive folders. It will be a step in the direction of increased prestige, larger income, and an ever-growing clientele.

Address your letter to any of our houses or ask any Riggs representative. You have just so many hours each day, and the Genothalmic will help you get the most out of them.

RIGGS OPTICAL COMPANY

Exclusively Wholesale

Three Houses in Nebraska

OMAHA LINCOLN HASTINGS

Sioux City

Madison, Wis.
Quincy
Salt Lake City
Cedar Rapids
Council Bluffs
Iowa City
Galesburg
Mankato
Fargo
Kansas City
Denver
Green Bay
Reno, Nev.
Oklahoma City
Wichita
Sioux Falls
Pocatello
Pittsburg, Kas.
Santa Ana
San Francisco
Ogden
Portland
Pueblo
Appleton
St. Paul
Boise
Los Angeles
Spokane
Waterloo
Great Falls
Oakland, Cal.
Seattle
Tacoma
Butte
Salina
Fort Dodge
Rockford

This Book is due on the last date stamped below. **No further preliminary notice will be sent.** Requests for renewals must be made on or before the date of expiration.

DUE	RETURNED
NOV [illegible] 1937	NOV 5 1937

A fine of twenty-five cents will be charged for each week or fraction of a week the book is retained without the Library's authorization.